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TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1888.

No. ~~304~~. 43

JOSEPH ARON, APPELLANT,

vs.

THE MANHATTAN RAILWAY COMPANY.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK.

FILED JULY 28, 1886.

accession 23897

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1 The President of the United States of America to the Manhattan Railway Company, Greeting:

You are hereby commanded that you personally appear before the judges of the circuit court of the United States of America for the southern district of New York, in the second circuit court, in equity, on the first Monday of April, A. D. 1884, wherever the said court shall then be, to answer a bill of complaint exhibited against you in the said court by Joseph Aron, and do further and receive what the said court shall have considered in that behalf; and this you are not to omit under the penalty on you of two hundred and fifty dollars.

Witness Honorable Morrison R. Waite, Chief Justice of the Supreme Court of the United States, at the city of New York, on the 11th day of March, in the year one thousand eight hundred and eighty-four, and of the Independence of the United States of America the one hundred and eighth.

[L. S.] TIMOTHY GRIFFITH, *Clerk.*

MUNSON & PHILIPP,
Complainant's Sol'r.

The defendant is required to enter appearance in the above cause in the clerk's office of this court on or before the first Monday of April, 1884, or the bill will be taken *pro confesso* against it.

T. G., *Clerk.*

2 [Endorsed:] I hereby certify that on the 10th day of March, 1884, at the city of New York, in my district, I personally served the within subpœna upon the within-named The Manhattan Railway Company by exhibiting to D. W. McWilliams, sec'y, the within original and at the same time leaving with him a copy thereof. Dated March 19, 1884. Joel B. Erhardt, U. S. marshal, S. D. N. Y. W. H. M. U. S. circuit court. Filed Mar. 19, 1884. Timothy Griffith, clerk.

3 Circuit Court of the United States for the Southern District of New York. In Equity.

JOSEPH ARON *against* THE MANHATTAN RAILWAY COMPANY.

To the honorable the judges of the circuit court of the United States for the southern district of New York, in the second circuit:

Joseph Aron, a citizen of the State of New York and residing at New York city, in said State, brings this his bill of complaint against the Manhattan Railway Company, a corporation existing under the laws of the State of New York and having its principal office in New York city, in said State; and thereupon your orator complains and says—

That heretofore and before the 13th day of November, 1883, one William W. Rosenfield was the original and first inventor of certain new and useful improvements in railway car gates, fully described in the letters patent hereinafter mentioned, and which had not been known or used before his invention or discovery thereof, and which were not prior to his application for a patent therefor in public use or on sale in this country for more than two years.

4 And your orator further shows unto your honors that afterwards and on or about the 23d day of October, 1883, the said William W. Rosenfield, by an assignment in writing of that date, sold, assigned, and transferred unto your orator all his right, title, and interest in and to said improvements, as fully set forth and described in the specification, which he had prepared and executed preparatory to the obtaining of letters patent of the United States therefor, and authorized and requested the Commissioner of Patents to issue said letters patent, when granted, to your orator, the said Joseph Aron, as the assignee of his whole right and title therein, which assignment was duly recorded in the Patent Office of the United States.

And your orator further shows unto your honors that said William W. Rosenfield, being so as aforesaid the first inventor and discoverer of said improvements and being also a citizen of the United States, did make due application to the Commissioner of Patents of the United States for letters patent therefor, and on the 13th day of November, 1883, your orator did obtain letters patent of the United States as the assignee of said invention, in due form of law, under the seal of the Patent Office of the United States, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents of the United States, bearing date the day and year last aforesaid, whereby there was granted and secured to your orator, his heirs or assigns, or intended so to be, for the term of seventeen years from and after the date of said letters patent, the full and exclusive right and liberty of making, constructing, using, and vending to others be used, the said invention and improvements as set forth in said letters patent, which are numbered 288,494, and by virtue whereof your orator became the sole owner of all the rights and privileges granted and secured or intended to be granted and secured in and by said letters patent, as by said letters patent or a duly authenticated copy thereof, here in court to be produced, will fully and at large appear.

5 And your orator further shows unto your honors that by virtue of the premises he now is and has been at all times since the 13th day of November, 1883, the sole and exclusive owner of said letters patent No. 288,494 and all the rights and privileges granted and secured or intended to be granted and secured thereby; that said improvements have been and are of great benefit and advantage.

Yet the said defendant, well knowing the premises and the rights secured to your orator as aforesaid, but contriving to injure your orator and deprive him of the benefits and advantages which might and otherwise would have accrued to him from said invention after November 13th, 1883, and before the commencement of this suit, did, as your orator is informed and believes, without the license or allowance and against the will of your orator and in violation of his rights, make and use railway car gates in infringement of the aforesaid letters patent containing the improvements described and claimed in the aforesaid letters patent, and that it has used the same in the city, county, and State of New York since November 13th, 1883, and prior to the commencement of this suit, and still continues so to do—

All in defiance of the rights acquired by and secured to your orator as aforesaid and to his great and irreparable loss and injury, and by which he has been and still is being deprived of great gains and profits which he might and otherwise would have obtained, but which have been received and enjoyed and are being received and enjoyed by the said defendant by and through its aforesaid unlawful acts and doings.

That the said defendant has made and realized large profits and advantages therefrom, but to what extent and how much exactly your orator does not know, and prays a discovery thereof.

And your orator further says that the use of said improvements by said defendant and its avowed determination to continue the same in disregard and defiance of the rights of your orator have the effect to and do encourage and induce others to venture to infringe said letters patent in disregard of your orator's rights.

6 And forasmuch as your orator can have no adequate relief except in this court, to the end, therefore, that the said defendant may, if it can, show why your orator should not have the relief hereby prayed, and may, under its corporate seal and according to its best and utmost knowledge, full, true, direct, and perfect answers make to the premises and to all the several matters hereinbefore stated and charged as fully and particularly as if severally and separately interrogated as to each and every of such matters, and may be compelled to account for and pay to your orator the profits by it acquired and the damages suffered by your orator from its aforesaid unlawful acts.

And your orator prays that said defendant, The Manhattan Railway Company, its officers, servants, agents, attorneys, and workmen and each and every of them, may be restrained and enjoined provisionally and perpetually by the order and injunction of this honorable court from directly or indirectly making, constructing, using, vending, delivering, working, or putting into practice, operation, or use, or in anywise counterfeiting or imitating the said invention or any part thereof, or any railway car gates made in accordance therewith or like or similar to those which it has heretofore made or used; that the said defendant may be decreed to pay the costs of this suit, and that your orator may have such further relief or such other relief as to this honorable court shall seem meet and as shall be agreeable to equity.

May it please your honors to grant unto your orator the writ of injunction, as well provisional as perpetual, issuing out of and under the seal of this honorable court, commanding, enjoining, and restraining the said defendant, The Manhattan Railway Company, and its officers, servants, agents, attorneys, and workmen and each and every of them, as is hereinbefore in that behalf prayed.

May it please your honors to grant unto your orators the writ of subpœna, issuing out of and under the seal of this honorable court, directed to the said defendant, The Manhattan Railway Company, commanding it by a certain day and under a certain penalty to be and appear in this honorable court, then and there to answer the premises and to stand to and abide such order and decree as — be made against it. 7

And your orator will ever pray, etc.

JOSEPH ARON.

MUNSON & PHILIPP,
Solicitors and of Counsel for Complainant,
7 Beekman Street, New York City.

UNITED STATES OF AMERICA.

SOUTHERN DISTRICT OF NEW YORK,
City, County, and State of New York, } *ss:*

On the 10th day of March, 1884, before me personally appeared Joseph Aron, the above-named complainant, who, being by me duly sworn, did depose and say that he has read the foregoing bill of complaint subscribed by him and knows the contents thereof, and that the same is true of his own knowledge except as to the matters therein stated to be alleged on information and belief, and that to those matters he believes it to be true. 8

JOSEPH ARON.

Subscribed and sworn to before me this 10th day of March, 1884.

[SEAL.] THOMAS H. PALMER,
Notary Public, Kings County, N. Y.

Cert. filed in N. Y Co.

(Endorsed:) U. S. circuit court, southern district of N. Y. In equity. Joseph Aron *vs.* The Manhattan Railway Company. Bill of complaint. Munson & Philipp, Temple Court, 7 Beekman St., New York, solicitors & of counsel for complainant. U. S. circuit court. Filed Mar. 11, 1884. Timothy Griffith, clerk.

9 Circuit Court of the United States for the Southern District of New York.

JOSEPH ARON *against* THE MANHATTAN RAILWAY CO.

SIR: Please enter our appearance as solicitors for these defendants, The Manhattan Railway Company, in the above-entitled action.

Yours, &c.,

DEYS, DUER & BAUERDORF,
Solicitors for Defend'ts, 115 *Broadway, New York.*

Dated New York, April 2nd, 1884.

To the clerk of the circuit court of the United States for the southern district of New York.

10 [Endorsed:] U. S. circuit court, southern dist. of New York. Joseph Aron against The Manhattan Railway Company. Notice to clerk to enter appearance. Deys, Duer and Bauerdorf, 115 Broadway, N. Y. U. S. circuit court. Filed April 2, 1884. Timothy Griffith, clerk.

11 *The Answer of The Manhattan Railway Company to the Bill of Complaint of Joseph Aron.*

Circuit Court of the United States for the Southern District of New York. In Equity.

JOSEPH ARON *against* THE MANHATTAN RAILWAY CO.

To the honorable the judges of the circuit court of the United States for the southern district of New York, in the second circuit:

The defendant reserving to itself all right and benefit of exception that can be taken to the said bill, for answer thereto or to so much thereof as it is advised is material to make answer thereto—

First. It alleges that it is a corporation duly organized and existing under the laws of the State of New York.

Second. Upon its information and belief it denies that William W. Rosenfield, mentioned in the said bill of complaint, was at any time heretofore either the first or original inventor of the
12 alleged new and useful improvement or any part thereof referred to in the said bill or any material or substantial portion thereof, but, on the contrary thereof, the defendant says that the alleged contrivances and combinations set forth in the said letters patent were not novel or patentable, and are substantially described in the following English letters patent, viz: Granted to Alexander Melville Clark March 16, 1877, No. 1072; Thomas Poolly Cooper February 21, 1873, No. 653; Samuel Smith May 27, 1872, No. 1602.

And in the following American letters patent granted John Stevenson, Nos. 6427, May 11, 1875; 6228, May 11, 1875; 6429, May 11, 1875; 162,964, May 4, 1875; 147,190, February 3, 1874; 155,118, September 15, 1874.

And defendant, further answering, says—

That the said contrivances, combinations, or improvements were known to and publicly used by divers persons at various places prior to the alleged invention of the said complainant and for more than two years prior to the issuance of the said letters patent, but whose names and places of residence are at present unknown to this defendant; and, with reference to these persons, defendant begs leave to insert their names and places of residence as soon as they shall become known to it.

Third. It has not knowledge or information sufficient to form a belief whether or not the said William W. Rosenfield at any time, by an assignment in writing or otherwise, sold, assigned, or transferred to Jaseph Aron all his right, title, or interest in or to the said alleged improvements or any part thereof, or authorized or requested the Commissioner of Patents to issue any letters patent to the said Joseph Aron, as assignee or otherwise, or whether or not any assignment respecting the same was filed in the Patent Office of the United States.

13 Fourth. It has not knowledge or information sufficient to form a belief of either of the allegations of the said bill, that the said Rosenfield applied to the Commissioner of Patents of the United States for letters patent for any such invention as is there referred to, or that thereafter due or any proceedings were had on such alleged application, or that letters patent of the United States were issued thereon to the said Joseph Aron, as assignee of the said Rosenfield or otherwise, for such invention in accordance with the conditions and requirements of the laws of the United States respecting the same.

Fifth. It is informed that letters patent of the United States, dated November 13th, 1883, and numbered —, were issued to Joseph Aron, and also that such letters patent were on their face, for the term of seventeen years, but the defendant, on information and belief, denies that such letters patent granted to the said Aron or to his heirs or assigns for any period the full and exclusive right of making, using, or vending the said improvement or invention throughout the United States or the territories thereof.

Sixth. The defendant denies that in violation of the complainant's rights it has been or is now infringing the said letters patent, within this district or elsewhere, by making, using, or selling the apparatus described or claimed in the said letters patent, or any substantial or material part thereof. It alleges that it has used railway cars and carriages employing apparatus similar in some respects to that described in the said letters patent, but whether in so doing it has used cars or carriages made, arranged, or constructed, or combined according to the principles, construction, or arrangement or combination set forth, described, or claimed in the complainant's letters patent, or contrary to or in infringement of any of his
14 rights, defendant has no knowledge or information sufficient
to form a belief and leaves complainant to make proof of the allegations of his bill in that behalf.

Seventh. It further alleges on its information and belief that what was described in complainant's said letters patent and the specifications thereof did not, in view of the state of the art at the time of the said Rosenfield's alleged discovery, constitute invention or the invention of anything new or useful, and that the devices thereby shown were and are inoperative and practically useless.

And this defendant, further answering, denies that it derives or receives from the use of the said alleged invention large gains or profits or any gains or profits whatever.

Eighth. Defendant denies that by any of its acts as alleged in the said bill or otherwise the complainant has sustained or will sustain any great or irreparable or other damage whatever.

MANHATTAN RAILWAY CO.,
By D. W. McWILLIAMS, *Secretary.*

DEYO, DUER & BAUERDORF,
Solicitors for Defendants, 115 *Broadway, New York.*

UNITED STATES OF AMERICA.

SOUTHERN DISTRICT OF NEW YORK, } *ss:*
City and County of New York, }

Daniel W. McWilliams, being duly sworn, says that he is the secretary and treasurer of the defendant herein; that the foregoing answer is true to his own knowledge, except as to the matters which are therein stated to be alleged on information and belief, and as to these matters he believes it to be true.

DAN'L W. McWILLIAMS.

15 Sworn to June 10th, 1884, before me—
[L. S.] THOMAS J. PURDY,
Notary Public, N. Y. Co.

Endorsed: U. S. circuit court. Joseph Aron *vs.* The Manhattan Railway Company. Answer. Deyo, Duer & Bauerdorf, attorneys for def't, 115 Broadway, N. Y. U. S. circuit court. Filed June 10, 1884. Timothy Griffith, clerk.

16 *Replication.*

Circuit Court of the United States, Southern District of New York.
In Equity.

JOSEPH ARON *against* THE MANHATTAN RAILWAY COMPANY.

The replication of the above-named complainant to the answer of the above-named defendant.

This repliant, saving and reserving to himself, now and at all times hereafter, all and all manner of benefit and advantage of exception which may be had or taken to the manifold insufficiencies of said answer, for replication thereunto says that he will aver, maintain, and prove his bill of complaint to be true, certain, and sufficient in law to be answered unto, and that the said answer of the said defendant is uncertain, untrue, and insufficient to be replied unto by this repliant, without this, that any other matter or thing whatsoever in the said answer contained material or effectual in the law to be replied unto and not herein and hereby well and sufficiently replied unto, confessed and avoided, traversed or denied, is true; all which matters and things this repliant is and will be ready to aver, maintain, and prove as this honorable court shall direct, and humbly prays as in and by his said bill he has already prayed.

MUNSON & PHILIPP,
Solicitors for Complainant.

17 United States Circuit Court, Southern District of New York.

JOSEPH ARON *against* THE MANHATTAN RAILWAY COMPANY.

Testimony taken on the part of the complainant under and pursuant to the 67th rule of the Supreme Court of the United States as amended, before John A. Shields, Esq., a standing examiner of said court.

NEW YORK, *August* 13*th*, 1884—11 o'clock a. m.

Present: Munson & Philipp, counsel for complainant, and Deyo, Duer & Bauerdorf, counsel for defendant.

All objections on the part of the defendant, except as to the form of questions, are reserved and are to be made before the commencement of the cross-examination.

Counsel for complainant files in evidence on his behalf a certified copy of United States letters patent No. 288,494, granted November 13th, 1883, to Joseph Aron, as assignee of William W. Rosenfield, for improvements in railway car gate, and the same is marked Complainant's Exhibit Complainant's Patent, August 13th, 1884, J. A. S., ex'r.

WILLIAM C. BEHRENS, a witness called on the part of the complainant, being duly sworn, deposes and says:

1 Q. What is your name, age, residence, and occupation?

18 A. William C. Behrens; my age is 39; residence, New York city, and I am by occupation a counselor in patent causes and solicitor of patents.

2 Q. What opportunities have you had to familiarize yourself with mechanical principles; what opportunity to apply such principles in the examination of patented inventions, and what experience in the study of drawings and specifications of inventions and as an expert in matters pertaining to patents?

A. For several years I made a special study of the subject of civil engineering. I understand and have prepared drawings, both mechanical and architectural. For about six years I held the position of examiner in the U. S. Patent Office, and for about three years of said time I had charge of the division which embraces, among other classes of inventions, that relating to gates. For several years I have been engaged in practicing in matters relating to patents, and have frequently been called upon to give opinions as to the validity and scope of patents, and in doing this I have been obliged to examine and familiarize myself with numerous inventions as described and represented in the specifications and drawings of foreign and United States patents.

3 Q. Have you examined the Complainant's Exhibit Complain-

ant's Patent, and do you understand the construction and operation of the mechanism therein shown and described?

A. I have examined the patent referred to in the question and believe that I understand the contents thereof and the construction and mode of operation of the mechanism therein shown and described.

4 Q. Will you please examine the model which I now hand you and state whether said model contains the combinations of mechanism recited in the first five claims of Complainant's Exhibit Complainant's Patent?

A. I have examined the model referred to in the question and find that it correctly represents the combinations of devices recited in the first five claims of the said patent.

19 Model referred to is filed in evidence, and the same is marked Complainant's Exhibit Complainant's Gates, August 13th, 1884, J. A. S., ex'r.

5 Q. Have you examined the cars in use upon the road of the defendant company (the Manhattan Railway Company) with special reference to the gates used to close the entrances to the platforms and the mechanism for opening and closing said gates?

A. I have.

6 Q. Please examine the model which I now hand you and state whether said model correctly represents the arrangement of the gates for closing the entrances to the platforms of the cars and the mechanism for opening and closing said gates which you saw in use upon the cars of the defendant company.

A. I have examined the model referred to in the question and find that it correctly represents the arrangement of the gates for closing the side entrances to the platforms of the cars and the mechanism for opening and closing the said gates which I saw in use upon the cars of the Manhattan Railway Co.

The model referred to is filed in evidence, and the same is marked Complainant's Exhibit Defendant's Gates, August 13th, 1884, J. A. S., examiner.

7 Q. Did you ride on the cars of the defendant company between the 13th day of November, 1883, and the 11th day of March, 1884; and, if so, how frequently?

A. I did, and nearly every day.

8 Q. What, if any, mechanism did you see in use during that period upon the cars of said company for opening and closing the gates of the platforms?

A. I saw the mechanism represented in the model, Complainant's Exhibit Defendant's Gates.

9 Q. How many cars did you see during that period provided with this mechanism, as near as you can recollect?

A. I saw a large number so provided.

20 10 Q. Will you please compare the mechanism which you saw in use on the defendant's cars for opening and closing the gates of the platforms and that shown in Complainant's Exhibit

Defendant's Gates with the mechanism recited in the first five claims of Complainant's Exhibit Complainant's Patent and state whether, in your opinion, the said gates and model contain the combinations of mechanism recited in each of said five claims, giving your reasons for any opinion you may express?

A. Before making the comparison required by the question I desire to state what I consider the invention set forth in Complainant's Exhibit Complainant's Patent.

As I understand it, the object of the invention is to provide means whereby the guard or attendant standing in the passage-way leading from one car to the other and near the inner ends of the platform guard rails may without changing his position open or close both of the gates to the side entrances of the platforms. This object is obtained by providing operating handles, placed near the inner ends of the platform guard rails, and connecting said handles by intermediate mechanism to said gates. Various means for attaining this object are described in the specification. The means particularly described in the specification and represented in the drawings consists of a rod sliding in or on a guide or bearing secured to the guard rail, which rod is connected at one end to a link, the other end of which link is connected to the gate, while the other end of said rod is connected to the operating handle located near the inner end of the guard rail. Two arrangements of the said rod are illustrated in the drawings. In figures 1 and 2 the sliding rod is arranged on the outside of the guard rail and its outer end is connected to a link, which link is connected to the gate through the medium of an arm or lever rigidly secured to the gate. In figure 3 the sliding rod is arranged on the inside of the guard rail and its inner end is connected to a link which is directly secured to
21 the gate. In the first case the arm or lever is attached to the gate in order that the sliding rod and link may be arranged on the outside of the guard rail. The addition of this arm or lever does not change the character of the combination and is within the scope of the invention.

Making now the comparison required by the question, I find that the mechanism in use on the cars of the Manhattan Railway Company for opening and closing the gates to the side entrances of the platforms and that shown in Complainant's Exhibit Defendant's Gates is in each case embodied in the combination and arrangement of devices claimed in claims 1 to 5, inclusive, of Complainant's Exhibit Complainant's Patent. In view of the fact that the model, Complainant's Exhibit Defendant's Gates, correctly represents the mechanism in use on the cars of the defendant company, I shall hereafter refer more particularly to said model, and in using the term "defendant's gates" it is to be understood that I refer to said model.

Adjourned to Thursday, August 14th, 1884, at 10.30 a. m.

NEW YORK, *August 14th*, 1884—11 o'clock a. m.

Met pursuant to adjournment.

Present: Counsel as before.

The direct examination of WILLIAM C. BEHRENS continued, and he continues his answer to question 10 as follows:

Referring to the claims of Complainant's Exhibit Complainant's Patent, I find that the first claim covers the combination of three elements or devices, namely:

First, a gate arranged to close the side entrance to a car platform;

Second, an operating handle located at or near the inner end of the platform guard rail; and,

22 Third, means — connecting said gate and handle—the whole so arranged that the attendant standing at the inner end of the platform guard rail and without changing his position may open and close the gate.

Now, I find in defendant's gates the same combination of elements combined and arranged in substantially the same manner. I find a gate to close the side entrance to a car platform, an operating handle located at or near the inner end of the platform guard rail, and means connecting said gate and handle, the whole so arranged that the attendant may open and close the gate while standing at the end of said guard rail.

The gate proper of the said patent and that of defendant's gates are identical; the operating handle is in each case located at or near the inner end of the platform guard rail, and the said handle is in each case connected to the inner end of a rod, the other end of which is attached by a link to the gate.

I find several minor differences in the construction.

In the case of the patent the operating handle is attached directly to the rod, while in the case of defendants'gates a bell-crank lever is interposed between said rod and handle. This difference does not, however, change the character of the combination and is within the scope of the invention.

Further, in the case of the patent the rod is arranged to slide in a sleeve or bearing attached to the guard rail, while in the case of defendant's gates the rod is provided or formed with a bearing which slides on a bar secured to the guard rail. This reversal of the arrangement of the parts does not change the character of the combination and is embraced within the scope of the invention.

Further, I find in the case of the patent that the rod is formed in one piece while in the case of defendant's gates the rod is jointed—that is, one part of the rod is provided or formed with a bearing while the other part is pivoted at one end thereto, in order that the short end of the bell-crank lever may be attached to the free end of the rod. None of these changes in the construction affect the character of the combination or change substantially the mode of
23 operation, and they are all embraced within the terms of the first claim.

The second claim consists of the combination, with the two gates arranged to close the adjacent side entrances to the adjoining patforms of two cars, of two operating handles located adjacent to each other and at or near the inner ends of the platform guard rails, and means connecting the said gates and handles, the whole so arranged that the attendant standing at the inner ends of the said guard rails and in the passage-way leading from one car to the other may, without changing his position, operate both gates.

Now, I find in defendant's gates the same combination of elements combined and arranged in substantially the same manner. I find two gates arranged to close the adjacent side entrances to the adjoining platforms of two cars, two operating handles located at or near the inner ends of the platform guard rails and adjacent to each other, and means connecting said gates and handles, the whole arranged so that the attendant standing in the passage-way leading from one car to the other may, without changing his position, open or close both of said gates. Both in the case of complainant's patent and defendant's gates the operating handles, gates, and connecting mechanisms are duplicates of each other, and the same minor differences of construction pointed out in the consideration of the first claim exist and need not therefore be again referred to.

The third claim of said complainant's patent consists of the combination of four elements or devices, namely:

First, a railway car and its platform having an end guard rail by which a side entrance thereto is provided.

Second, a gate for closing said entrance.

Third, a rod sliding in or on guides secured to said guard rail.

Fourth, a link connected to said gate and rod.

24 Now, I find in defendant's gates the same combination of elements combined and arranged in substantially the same manner. I find a car platform provided with an end guard rail by which a side entrance to the car is provided, a gate for closing said entrance, a rod sliding on a guide or bearing secured to said guard rail, and a link connected to said gate and rod, the inner end of said rod extending inward to a point convenient for the attachment of an operating handle.

The fourth claim of said complainant's patent consists of the combination of five elements or devices, namely:

First, a railway car and its platform having an end guard rail by which a side entrance thereto is provided.

Second, a swinging gate for closing said entrance.

Third, a rod sliding in or on a guide secured to said rail.

Fourth, a link connected to said gate and rod.

Fifth, means for locking said gate in its closed position.

The fourth claim consists of the combination of elements recited in the third claim, and combines with said elements means for locking said gate in its closed position.

Now, I find in defendant's gates the same combination of elements combined and arranged in substantially the same manner. I find a car platform having an end guard rail by which a side entrance to the car is formed, a swinging gate for closing said entrance, a rod sliding on a guide secured to said rail, a link connected to said

gate and rod, and means for locking said gate in its closed position.
The mechanism for locking in defendant's gates differs in construc-
tion from that shown in complainant's patent, but the locking is in
both cases effected by the handle and by a movement imparted to
the same. In the case of the patent the locking is effected, after the
gate is closed, by a lateral movement of the handle on its pivot, which
brings a projection opposite a stop, while in the case of defendant's
gates the locking is effected by a continued movement of the handle
after the gate has been closed, which causes the short arm of
25 the lever to come in contact with a stop, when the pivot of
the lever, the pivotal connection between the lever and rod,
and the pivotal connection between the two parts of the rod are
substantially in line. These two constructions are, in a broad
sense, substantially the same, and the substitution of the one
locking mechanism for the other in the combination of elements
claimed in claim four does not change the character of the combi-
nation and is within the scope of the invention.

I find that the fifth claim of complainant's patent consists of a combination, with the two gates arranged to close the adjacent side entrances to the adjoining platforms of two cars, of rods sliding in or on guides secured to the guard rails of said platforms, and links connected to said gates and rods.

Now, I find in defendant's gates the same combination of elements combined and arranged in substantially the same manner. I find two gates arranged to close the adjacent side entrances to the adjoining platforms of two cars, rods sliding on guides secured to the guard rails of said platforms and extending inward to a point convenient for the attachment of handles, and links which connect said gates and rods.

Adjourned to Wednesday, August 20th, 1884, at 11 a. m.

NEW YORK, *August 20th*, 1884—11 a. m.

Met pursuant to adjournment.

Adjourned to Thursday, August 21st, 1884, at 11 a. m.

NEW YORK, *August 21st*, 1884—11 a. m.

Met pursuant to adjournment.

Present: Counsel for the respective parties.

Adjourned to Thursday, August 28th, 1884, at 11 a. m., at
26 the request of defendant's counsel, upon the understanding
with him that he will either waive cross-examination of the
witness before that time or proceed with it upon that day without
fail.

NEW YORK, *August 28th*, 1884—11 o'clock a. m.

Met pursuant to adjournment.

Present: Counsel as before.

The direct examination of Mr. WILLIAM C. BEHRENS continued:

11 Q. Referring to your answers to questions 5, 6, 7, 8, and 9, will

you please state where you saw the cars in use which were provided with the gates and operating mechanism to which you have referred?

A. I saw the cars referred to in said questions in the city of New York.

Witness submitted for cross-examination.

WM. C. BEHRENS.

Adjourned subject to notice.

27 United States Circuit Court, Southern District of New York.

JOSEPH ARON *against* THE MANHATTAN RAILWAY COMPANY.

Testimony taken on the part of the complainant under and pursuant to the 67th rule of the Supreme Court of the United States, as amended, before John A. Shields, Esq., a standing examiner of said court.

NEW YORK, *April* 14*th*, 1885—1.30 o'clock p. m.

Present: Munson & Philipp, Esqs., counsel for complainant, and Edwin H. Brown, Esq., counsel for defendant.

WILLIAM W. ROSENFIELD, a witness produced on behalf of the complainant, being duly sworn, deposes and says:

1 Q. What is your name, age, residence, and occupation?

A. William W. Rosenfield; age, 19 years; reside in New York city, and am in the employ of the Home Vapor Bath and Disinfector Company.

2 Q. In what capacity are you employed by this company?

A. As a clerk, superintendent, and in a general way.

3 Q. Please explain a little more definitely what you mean by a superintendent; superintendent of what?

A. Of the manufacture of the articles for sale by the said company.

28 4 Q. Will you please state what has been the nature of your employment for the last three or four years?

A. Well, I have been a clerk, and most of the time have been perfecting new inventions.

5 Q. Are you the Wm. W. Rosenfield who made the application upon which United States letters patent No. 288,494 were granted on November 13th, 1883, for improvements in railway car gates?

A. I am.

6 Q. When did you make the invention which is shown and described in these letters patent?

A. During the summer of 1881.

7 Q. Where were you employed at that time?

A. I was in the employ of the Edison Electric Light Company.

8 Q. Did you at the time you made the invention make any drawing illustrating the same?

A. I did make a drawing.

Counsel for the defendant objects to the answer as secondary evidence.

9 Q. What has become of this drawing?

A. It has either been lost or accidentally destroyed.

10 Q. Have you made search for it?

A. I have made a thorough search for it.

11 Q. When, as near as you can recollect, did you last see it?

A. In the autumn of 1881.

12 Q. Did this drawing represent a gate opening and closing mechanism like that shown in your letters patent No. 288,494?

Objected to as leading.

Question withdrawn.

13 Q. Please explain just what this drawing which you made in the summer of 1881 represented.

A. It represented a gate opening, closing, and locking mechanism.
It consisted of a link connecting the gate with a connecting
29 rod, with operating and locking handles on said connecting
rod; also a locking lug; also a bearing to support and guide
said connecting rod.

14 Q. To what part of the car was the gate hinged?

A. To the platform guard rail.

15 Q. Which way was this gate arranged to swing—inward or outward?

A. It was arranged to swing inward.

16 Q. And where was this guide or bearing for the connecting rod located and to what was it secured?

A. It was located on and secured to the guard rail.

17 Q. And were all these features which you have described fully illustrated in the drawing which you made in 1881 so that any one familiar with mechanical structures and drawings would have understood the construction of the apparatus as you have described it?

Objected to as leading.

A. Yes.

18 Q. Now please describe briefly the operation of the apparatus which was illustrated in this drawing?

A. It was arranged so that by pushing or pulling the operating handle the gate would be opened or closed, and by means of the same handle it could be locked when closed.

19 Q. Where was the guard or attendant to stand in opening and closing the gate?

A. At the inner end of the guard rail.

20 Q. Will you please look at Fig. 3 of the drawing of your letters patent No. 288,494 and state how it compares with the drawing which you made in 1881 and which you have just been describing.

A. It is substantially part of my drawing of 1881.

21 Q. Well, what more did your drawing of 1881 show than Fig. 3 of your patent?

A. It showed the mechanism as being also on the outside as well the inside of the guard rail.

30 22 Q. Then am I to understand that the drawing you made in 1881 showed the gate opening and closing mechanism arranged in both of the positions illustrated in your patent?

A. It did show the opening, closing, and locking mechanism in the two positions shown in the patent.

23 Q. After you had made this drawing in 1881 did you show it to any one and explain the invention to any one?

A. I did.

24 Q. To whom did you show it and to whom did you explain the invention?

A. One person was Edward C. Rowland; the others were members of my family, viz., my father, my mother, and sister.

25 Q. When did you next do anything in regard to this invention?

A. About the winter of the same year I showed it to another person.

26 Q. What did you show to this other person?

A. I showed this person a drawing somewhat similar to the one I had made in 1881.

Objected to as secondary and indefinite so far as the second or later drawing is concerned.

27 Q. In answer to 25 Q. you say the winter of "that year." Do you mean the winter of 1881–1882?

A. I mean the winter of 1881–1882.

28 Q. Have you the drawing which you have just said you showed to another person in the winter of 1881–1882?

A. I have the same and now produce it.

Drawing referred to is offered in evidence and marked "Complainant's Exhibit Rosenfeld Drawing, J. A. S., ex'r."

Counsel for the defendant consents that the above exhibit may be mounted in order to preserve it.

31 29 Q. When, as near as you can recollect, was this drawing made and who made it?

A. It was made by me in the early part of the winter of 1881–1882.

Adjourned until 11 a. m., 18th April, 1885.

NEW YORK, *April 18th*, 1885—11 o'clock a. m.

Met pursuant to adjournment.

Present: Counsel as before.

The examination of WILLIAM W. ROSENFIELD continued:

30 Q. When and to whom did you first show this drawing?

A. I showed it to Mr. Joseph Aron in the latter part of December, 1881.

31 Q. Did you explain to him what it represented?

A. I explained the invention in full to him.

32 Q. Did you show and explain this drawing to any one else about the same time; and, if so, to whom and when, as near as you can recollect?

A. I showed it to my father and mother and sister at the time it was made.

33 Q. After you had made this drawing and showed it to the persons you have mentioned what next did you do about the invention?

A. I had a model thereof constructed from the said drawing.

34 Q. Have you the model to which you refer?

A. I have, and now produce it.

The model referred to is offered in evidence and marked Complainant's Exhibit Rosenfield Model, April 18, 1885, J. A. S., ex'r.

32 35 Q. When and by whom was this model made?

A. It was made in the month of March, 1882, by E. S. Behringer, of 116 Maiden Lane, N. Y. city.

36 Q. I notice upon the drawing, Complainant's Exhibit Rosenfield Drawing, the name of Joseph Aron and A. Rosenfield, and also the stamp of Weil & Co. When, if you know, were those names written and this stamp impressed upon the drawing, and by whom?

A. The stamp and two of the signatures were placed on the drawing April 27th, 1882, by Joseph Aron and A. Rosenfield. The third signature was executed, I think, at some previous time.

37 Q. After you had the model, Exhibit Rosenfield Model, made what did you do with it, if anything?

A. I showed it to others.

38 Q. Who did you show it to?

A. One person was John J. Kiernen; the other, if I remember right, was a clerk in his office.

39 Q. What next did you do with it?

A. I either first applied for a patent for the invention or I showed it to F. K. Hain, general manager of the elevated railway system.

Answer objected to so far as it relates to showing it to F. K. Hain, superintendent of the elevated railway system, as not proper in rebuttal, but as amounting to a reopening of the testimony-in-chief and as new matter not warranted by the testimony taken on the part of the defendant and as without foundation, and notice is hereby given that a motion will be made to strike out said testimony or for leave to answer the same.

40 Q. Please explain fully what you mean when you say you applied for a patent. State just what you did.

A. I brought the model to the office of Munson & Philipp, patent solicitors, and gave instructions that they should make the requisite drawings and papers for an application for letters patent.

33 41 Q. And I understand you to say that you do not recollect certainly whether you showed the model to Mr. Hain before you brought it to the offices of Munson & Philipp or afterwards. Am I correct?

The objection and notice made to answer 39 are continued to this question.

A. You understand correctly.

42 Q. State, as nearly as you can, the time when you brought the model to the offices of Munson & Philipp, as you have stated.

A. May 8th, 1882.

43 Q. Now please state fully the circumstances which attended your showing the model, Exhibit Rosenfield Model, to Mr. Hain, stating what led you to show the model to him, and what took place at the time you showed it to him, giving, as nearly as you can, any conversation that took place between you and Mr. Hain or between Mr. Hain and others in your presence.

A. I went to Mr. Hain because I understood he was the proper person to submit all improvements to in any way connected with the elevated road. I thought at the time that the elevated railway would be more apt to use this invention than any other road. Accordingly I went to Mr. Hain with Mr. Joseph Aron with a letter of introduction from Mr. J. J. Kiernan, a State senator, and I explained my invention in full; and I also showed the drawing and model, Exhibit Rosenfield Drawing and Exhibit Rosenfield Model, but Mr. Hain, after a thorough inspection of the said model and drawing, said that they had no use for an invention of that kind, at the same time praising it as very ingenious, &c.

44 Q. At the time you showed this model to Mr. Hain was it in the same condition which you now find it?

A. It was, with the exception of the secondary gate or guard and a lug or stop which holds the said secondary gate or guard in a certain position.

34 45 Q. By the "secondary gate or guard" do you mean the gate which closes the space between the platforms of the two cars when the gate for closing the entrance to the platform is opened?

A. Yes.

46 Q. And this gate for closing the space between the platforms of the two cars was not on the model at the time you showed it to Mr. Hain, but was added afterwards, was it?

A. Yes, it was added afterwards.

47 Q. What led you to make this addition to the model?

A. When I went to Mr. Hain to show my invention he said if I was to make some arrangement to prevent persons from falling between the car platforms that he might use such an invention.

48 Q. And that led you to devise this supplemental gate, did it?

A. It did.

49 Q. When you had this interview with Mr. Hain, at the time you showed him the model, did he give it careful attention so as to thoroughly understand it?

A. He did.

50 Q. And did he discuss the merits of the invention with you to any extent?

A. He did.

51 Q. Did he say anything that led you to suppose that the ideas embodied in the model were not entirely new to him?

A. He did not say that it was an old invention.

52 Q. Did he say anything which indicated to you that he had ever seen or heard of anything like it before?

A. No, he did not.

53 Q. Please fix, as nearly as you can, the time when you went to Mr. Hain with this model and drawing, as you have testified.

A. I think it was during the latter part of April or the early part of May.

54 Q. Are you certain that it was within a short time,
35 either before or after, of the time you brought the model to
the offices of Munson & Philipp for the purpose of applying for a patent?

A. I think it was within a short time either before or after.

55 Q. After you placed this model in the hands of Munson & Philipp and instructed them to prepare an application for a patent for the invention, did you give them instructions to hold the matter in abeyance for a time?

A. I did.

56 Q. And that led you to give them the second instructions?

A. After the elevated railroad official, Mr. Hain, had refused to adopt this invention, not being in very good circumstances, and my aim being to make only inventions that would give me immediate returns, I decided to spend any money that I could then control in the said kind of inventions, and having this in mind I decided that I would wait till some future time before I would give any time and money for the railway-gate application.

57 Q. Then, as I understand you, it was the refusal of Mr. Hain to adopt the invention that led you temporarily to withhold your application for a patent?

A. Yes.

58 Q. And would you have proceeded at once to apply for and take out a patent had Mr. Hain given you any encouragement as to the adoption of the invention by the elevated roads?

A. I would.

59 Q. Did you at that time know of any other road that would be likely to wish to adopt your invention and put it into use?

A. I did not.

60 Q. After you gave instruction to your attorneys to hold the gate application in abeyance for a time, what did you next do in regard to the invention, and when?

A. I again told Messrs. Munson & Philipp to make an application for a patent for the same.

36 61 Q. And about when was it that you instructed them a second time to proceed with the application?

A. In April, 1883.

62 Q. What led you to give them these second instructions to apply for a patent?

A. Because I had some time before seen a device similar to mine in use on the cars of the elevated railroad.

63 Q. About what time did you first see this gate opening and closing mechanism in use on the elevated railroad?

A. About the end of the year 1882.

64 Q. And as soon as you saw this gate opening and closing mechanism in use did you instruct your attorneys to prepare your application for your patent?

A. I did.

65 Q. Then it was probably earlier than April, 1883, that you gave them these final instructions, was it not?

A. Yes.

Counsel for complainant offers in evidence a certified copy of the file wrapper, contents, and drawing in the matter of the application for letters patent granted William W. Rosenfield, assignor to Joseph Aron, November 13, 1883, No. 288,494, for improvement in railway car gates, and the same is marked Complainant's Exhibit Rosenfield Application, April 18, 1885, J. A. S., ex'r.

66 Q. Have you ever taken out letters patent of the United States for other inventions which you have made beside this one for railway car gates?

Objected to as immaterial and irrelevant and not calling for the best evidence.

A. I have.

67 Q. About how many patents have you taken out in the United States since 1881?

The same objections.

37 A. Five.

68 Q. Have the inventions described in these patents or most of them been commercially successful?

The same objections.

A. They have.

69 Q. Have you been able to interest capital in the working of your inventions?

The same objections.

A. Yes, sir.

70 Q. Is the Home Vapor Bath and Disinfector Company engaged exclusively in the working of inventions which have been made and patented by you?

The same objections.

A. It is.

71 Q. Will you look at the pamphlet I hand you and state what it is?

The same objections.

A. It is a publication issued by the said company in order to interest the public in the apparatus it has for sale.

The pamphlet referred is offered in evidence and is marked Complainant's Exhibit Home Vapor Bath Catalogue, April 18, 1885, J. A. S., ex'r.

Cross-examined by E. H. Browne, Esq.:

Counsel for defendant makes the objection stated to the 39th question generally in regard to all questions and answers relating to the interview of the witness with F. K. Hain, and it is further objected that all such testimony as relates to what was said by the witness and by said Hain is incompetent, as hearsay, and it is further objected that the testimony of the witness that he understood that said Hain was the proper person to submit inventions to is incompetent, as not being a statement of the fact that he was so, but a mere understanding on the part of the witness. 38

The objection is made at this time with the consent of counsel for complainant generally for the purpose of avoiding frequent repetition upon the record.

72 X Q. In what capacity were you employed by the Edison Electric Light Company?

A. My main employment was at solar printing, and occasionally I did tracing.

73 X Q. By solar printing you mean making solar print copies of drawings, do you not?

A. Yes.

74 X Q. From what time to what time did you work for the Edison Electric Light Company?

A. From the 9th of June through the first two weeks of August, 1881.

75 X Q. Under whom were you employed there?

A. Under Mr. Clarke.

76 X Q. At what address?

A. 65 Fifth avenue.

77 X Q. Please state on what material your first drawing was made, to which you refer in your eighth and subsequent answers?

A. It was drawing paper.

78 X Q. With what was it made?

A. It was first pencilled and then inked.

79 X Q. Was it made with drawing instruments or free hand?

A. With the aid of drawing instruments.

80 X Q. Where was it made?

A. At 65 Fifth avenue, N. Y. city.

81 X Q. In whose presence?

A. In the presence of E. C. Rowland.

82 X Q. Was he employed there then?

A. He was.

39 83 X Q. In what capacity?

A. Mostly at tracing.

84 X Q. What view or views were comprised in that drawing?

A. Top view of one end of a railway car and an end view of the same.

85 X Q. Was there more than one car illustrated in the drawing?

A. There was only one.

86 X Q. What did you do with that drawing when you finished it?

A. I took it home.

87 X Q. Where was it when you last saw it?

A. I think it was home when I last saw it.

88 X Q. Did you ever take it anywhere away from home after first taking it there immediately on finishing it?

A. I don't recollect taking it from home.

89 X Q. And whereabouts in your home do you recollect as last seeing it?

A. I don't remember just what room.

90 X Q. Referring to Complainant's Exhibit Rosenfield Model, please name each and every part which has been added to it since its original completion.

A. The secondary door or guard and the two arms which connect it to the main gate, and the lug which prevents the backward movement of the handle when it is open.

91 X Q. Except for the additions mentioned in your last answer, is the model in the same condition as it was when originally completed?

A. Essentially it is.

92 X Q. Is it in every respect?

A. Yes.

93 X Q. Were these parts which you mentioned in your 90th answer all put upon the model at the same time?

A. They were.

94 X Q. To whom did you refer in your 25th answer?

A. Mr. Joseph Aron.

95 X Q. You say you thought that the elevated railway would be more apt to use the invention than any other road. Had you contemplated the use of your alleged invention for the cars of any other road?

Objected to as calling for immaterial and irrelevant matter.

A. I did so contemplate.

96 X Q. In what way?

The same objection.

A. I thought that it could be used on almost all the railroads in this country.

97 X Q. What kind of railroads do you mean?

The same objection.

A. On all kinds that have cars with a platform.

98 X Q. Ordinary horse cars as well as others?

The same objection, and, further, that the witness' patent is the best evidence as to the scope of the use of his invention as he contemplated it.

A. Yes.

99 X Q. How did you conceive of applying it to the horse cars?

The same objection.

A. Substantially the same as on the elevated railroad cars.

100 X Q. And was this part of your original idea?

The same objection.

A. It was.

101 X Q. What object could there be in applying the gate and gate-operating mechanism to a horse car?

The same objection.

41 A. About the same object as there was in applying it to the elevated cars.

102 X Q. According to your original idea or conception, how and where was the gate-operating mechanism to be arranged when applied to a horse car?

The same objection.

A. Substantially the same as to the elevated railroad car.

103 X Q. Differently in any respect?

The same objection.

A. Presumably to suit the different situations without in any way differing from the original invention.

104 X Q. What do you mean by the original invention in your last answer?

The same objection.

A. The invention as I first conceived it.

105 X Q. Please describe it as you first conceived it in all its breadth and as to all its modifications and applications.

A. The invention consisted of suitable mechanism that would enable a person to open or close or otherwise operate a gate that closes the side entrance of a railway car platform or to lock the said gate when shut when the person is situated at a distance therefrom.

106 X Q. And when you use the term railway car in your last answer you mean a horse railway car or a steam railway car, as I understand you?

A. I mean both.

The last two questions are objected to on the ground that it is immaterial to the issue in this case what the inventor's original idea was as to the scope or breadth of his invention, as it is not 42 his original conception, but the invention as described and claimed in the patent *that* is the foundation of this action.

107 X Q. In your 103d answer you speak of the different situation. What did you mean?

Objected to as irrelevant and immaterial.

A. I meant by the different situation the different position with regard to the guard rail that would be necessary to place the operating mechanism thereon in order to operate the gate, substantially the same as conceived in my invention.

108 X Q. What was that different position?

The same objection.

A. I don't mean a different position from the position that was in my original invention. I simply mean the difference in the shape of the parts of the mechanism that might be required in order to adapt them to the different shape of the guard rail of the car.

109 X Q. And if the gate and gate-operating mechanism were applied to a horse car they would be substantially the same in operation and advantages as they would be on the rear platform of the last car of a train of elevated railway cars, would they not?

Objected to—

1st. As calling for an expression of opinion by the witness as to the advantages of the invention when used in different situations in different classes of cars, which is improper, as the witness has not qualified and is not being examined as an expert; and,

2d. As immaterial and irrelevant.

A. Under the same conditions the operation and advantages would be the same.

110 X Q. Your alleged invention did not involve any new construction of the guard railing of a car, did it?

43 Objected to on the ground that the patent sued on and the state of the art as shown by the record in the case are the best evidence as to what changes were necessary in existing structures in order to practically apply the invention.

Defendant's counsel says that this witness has been called to give a history of his invention, and submits that thus a foundation has been laid for the above question.

A. My invention did not necessarily.

111 X Q. You had before making your alleged invention seen cars on the elevated railway and on other railways with a passageway through the guard railing at the middle of the platform and opposite the car door, had you not?

The same objection.

A. I had seen such.

112 X Q. Had you, prior to making your alleged invention, seen any such cars provided with gates arranged at the side entrances to the platform?

The same objection.

A. I did see such on the cars of the elevated road; some of the gates were hinged to the body of the car, while others were hinged to the guard rail.

113 X Q. And prior to making your alleged invention, as I understand you?

The same objection.

A. Yes.

114 X Q. Referring to your 19th answer, please state why the

guard or attendant was to stand at the inner end of the guard rail in opening and closing the gate.

A. Because it was the most suitable place he could stand.

115 X Q. Had you seen guards or attendants on the elevated railway cars stand in that position?

A. Yes.

44 116 X Q. What for?

A. Because that would be the best place for them to stand in order to facilitate opening and closing the gates.

117 X Q. When you saw them standing there what, if anything, did they do?

Objected to as immaterial.

A. I have seen them doing nothing while standing there, and also I have seen them pull the bell-rope while in that position.

118 X Q. Is that all that you ever saw them do while standing in that position?

A. I have also seen them slam the gates shut in that position.

119 X Q. Did you see them do that before making your alleged invention?

A. Yes.

120 X Q. Did you ever see them open the gates while standing in that position prior to making your alleged invention?

A. No.

121 X Q. Did you never see them swing the gates open while standing in that position?

A. No.

122 X Q. Have you never seen that done, without the aid of any mechanism, by an attendant standing in the referred-to position?

A. No.

123 X Q. What was it that you referred to in your 62d answer? Please describe it in full.

A. It was the device which is shown in the Complainant's Exhibit Defendant's Gates.

124 X Q. You have described the first drawing which you say you made. Will you now describe the second drawing, to wit, Complainant's Exhibit Rosenfield Drawing, without looking at it, stating what views it contains and what each view shows?

A. To the best of my memory, there is an end view, a top view, and third view of handle.

45 125 X Q. According to your memory, what does the top view show?

A. It shows the device complete, as shown in the end view.

126 X Q. What device?

A. The device for opening and closing as well as locking the gate.

127 X Q. Does it show the device or mechanism on the outside or inside of the guard rail, according to your recollection?

A. On the outside.

128 X Q. And not on the inside?

A. No.

129 X Q. And what else beside the gate-operating mechanism is shown on the top view, according to your recollection?

A. The locking mechanism.

130 X Q. Anything else?

A. I think not.

131 X Q. How, according to your recollection, is the locking mechanism shown in this top view?

A. The operating handle is shown as engaging with a pin or projection on the guard rail.

Complainant's counsel objects to a continuance of this line of examination, which is being conducted probably for the purpose of testing the witness' memory, upon the ground that it seems unreasonable to examine a witness so minutely as to the contents of a drawing which he is not allowed to see; and, further, that this examination is unreasonable because the witness has not testified positively as to details of his first drawing, which the witness says is substantially like the drawing now under consideration.

Counsel desires further to state that this objection and protest is entered without any knowledge on his part as to whether the answers of the witness are correct or not, because, he, counsel,
46 has not looked at the drawing since it was referred to in the
direct examination, and does not remember with particularity as to its contents.

132 X Q. Do you remember whether more than one car is shown in the drawing?

A. There is only one shown.

133 X Q. Do you remember what is shown in the end view?

A. I do. A gate is shown, and a link connects this gate with a connecting rod, an operating handle being on the end of the rod.

134 X Q. According to your recollection, what kind of an operating handle is shown in this end view?

A. The handle has an aperture to which the fingers may enter.

135 X Q. Do you remember whether this drawing is made with the use of ink at all?

A. It was made by pencil; there was no ink used.

136 X Q. Was this drawing made with the aid of instruments?

A. No.

137 X Q. No instrument?

A. It was made without the aid of instruments, excepting, perhaps, a ruler.

138 X Q. Why was this second drawing made?

A. It was made in order to illustrate the invention.

139 X Q. Why was it made in addition to the first?

A. Because the first one was either lost or destroyed.

140 X Q. Was this second drawing made, then, to show the same features which had been shown by the first?

A. Yes; except that this drawing does not show the operating mechanism as being on the inside of the guard rail.

141 X Q. Were all the views of this second drawing, Complainant's Exhibit Rosenfield Drawing, made on the same occasion?

A. Yes; I think they were.

47 142 X Q. Are you positive about that?

A. Yes, sir.

143 X Q. Have you any memorandum of the time when that drawing was made?

A. I have none.

144 X Q. What are the lines which separate the views in Exhibit Rosenfield Drawing for?

A. Simply to separate the views.

145 X Q. Please mark the letter A on the handle in the end view.

A. I have done so.

146 X Q. You say you showed the first drawing to your father, mother, and sister. Was your sister older or younger than yourself?

A. Older.

147 X Q. How did you get the idea of the mechanism which you adopted for operating the gate?

Objected to as immaterial.

A. It was original with me.

Adjourned to Wednesday, April 22d, 1885, at 11 a. m.

Met pursuant to adjournment.
Present: Counsel as before.

Cross-examination continued:

148 X Q. Have you any memorandum of the time when you first showed Exhibit Rosenfield Drawing to Mr. Aron?

A. No.

149 X Q. Have you any memorandum of the time when Exhibit Rosenfield Model was made?

A. No.

150 X Q. What became of the letter of introduction you say you took to Mr. Hain?

A. I think Mr. Hain kept it.

48 151 X Q. I infer from your testimony that you have no memorandum by which you can fix the time when, as you say, you called upon Mr. Hain?

A. I have not.

152 X Q. In your 62d and 63d answers you say you saw gate opening and closing mechanism in use on the elevated railroads in the latter part of the year 1882, and in your 123d answer you say it was like the device shown in Complainant's Exhibit Defendant's Gate. In your cross-examination you also say that you saw, prior to making your alleged invention, cars of the elevated railroad provided with gates in some instances hinged to the body of the car and in other instances hinged to the guard rail. Have not some of the cars of the elevated railway, ever since you first saw them provided with the gates which were operated by hand, been continued in use without any mechanism for operating the gates.

Objected to as irrelevant and immaterial and not proper cross-examination, and, further, as an attempt on the part of the defendant to make the witness his own.

Defendant's counsel says that the testimony given by the witness in his 62d and 63d answers might raise the inference that the gate-operating mechanism had been used upon all the cars of the elevated railroad, and therefore it is proper for counsel to inquire as to the fact.

A. I have seen cars with the gates hinged on the body of the car unprovided with this mechanism up to this date.

Redirect:

153 Re-D. Q. Will you please letter the parts shown in the different figures of Exhibit Rosenfield Drawing with the letters used for the corresponding parts in your letters patent 288,494, naming the parts as you proceed?

49 A. A is the car, B is the car platform, C is the side entrance to the car, D is the gate, *a* is the post to which the gate is hinged, *b* is the guard rail, *c* is the post at the inner end of the guard rail, G is the passage-way leading from one car to the other, *d* is the curved arm connecting the gate with the link, *e* is the link, *f* is the sliding rod, *g* is the bearing for the rod, *h* is the operating handle, and X is the lug which engages with the operating handle. This latter is not shown in the patent.

154 Re-D. Q. In the course of your examination you have spoken of explaining the invention to Mr. Aron and to Mr. Hain and to others, and of exhibiting and explaining the drawing Exhibit Rosenfield Drawing and the model Exhibit Rosenfield Model. Will you please state what you explained—that is to say, how fully you explained the invention on these occasions to these parties?

A. I explained the invention fully—that is, its operation, the mechanism, its advantages, and all its features.

155 Re-D. Q. Did you explain how you contemplated applying it to the cars of the elevated railroad?

A. I did.

Recross:

156 Re-X Q. Did you explain how you contemplated applying it to other cars?

A. I did.

157 Re-X Q. What kind or kinds of other cars?

A. Any car that was provided with a platform with a side entrance.

WILLIAM W. ROSENFIELD.

Sworn to before me—

JOHN A. SHIELDS,
Examiner, &c.

50 Mr. **Anthony Rosenfield**, a witness produced on the part of the complainant, being duly sworn, deposes and says:

1 Q. Please state your name, age, residence, and occupation.

A. Anthony Rosenfield; age, fifty-seven years; I reside in New York city; I am a superintendent with the Home Vapor Bath & Disinfector Company.

2 Q. Are you acquainted with Wm. W. Rosenfield, to whom letters patent No. 288,494, for improvements in railway-car gates, were granted on November 13th, 1883?

A. I am; I am his father.

3 Q. Have you any knowledge of any invention in railway-car gates made by your son?

A. I have.

4 Q. When, as near as you can fix the time, did your son first explain any invention relating to railway-car gates to you?

A. It was between the months of June and August, 1881, when he was with Mr. Edison?

5 Q. Will you state briefly what this invention was that he explained to you at that time?

A. It was a gate opener and closer; also to lock the gate when it is closed.

6 Q. What kind of gates was this invention to be applied to?

A. For elevated roads; he made it for that purpose.

7 Q. Can you tell us what particular advantages he expected to gain by the use of this invention?

A. The mechanism was so arranged that if a person wanted to get into the cars while they were running they couldn't get onto the cars. It was also so arranged that a person could operate it easily without taking hold of the gate with his hand.

8 Q. Where was the man to stand to open and close the gate by means of this mechanism which your son explained to you?

A. He was to stand in the middle, between two cars, so that he could operate two gates at a time.

51 9 Q. Please explain briefly how the mechanism was arranged so that the man standing in the middle between two cars could operate two gates at a time.

A. There was one rod attached to each gate of the car. These rods run through sleeves attached to the guard rails, and had handles on their ends that the man could take hold of to pull and push on the rods to open and close the gates. By turning the handles you could fasten the gates.

10 Q. Did your son show you any drawing illustrating his invention at the time you have stated—that is, the summer of 1881?

A. He said it would be a handy thing to have something attached to cars so that nobody could get onto them while the cars were in motion. I asked him how he would do it, and he told me that he could do it, and I asked him to make me a drawing so that I could understand it, and he made a drawing and showed it and explained it.

11 Q. Did this drawing show the invention as you have just described it?

A. It did.

12 Q. Do you know what became of this drawing?

A. It was lost.

13 Q. Did you ever see it after the time he used it in explaining the invention to you?

A. I think I saw it several times.

14 Q. After this time do you know of his making any other drawings showing his invention?

A. Yes; he made one.

15 Q. About when did he make this second drawing?

A. It must have been somewhere in the fall or winter of 1881—about four or five months after the first one.

16 Q. Was this second drawing substantially like the first one?

A. Yes, sir.

17 Q. Will you look at the drawing I now hand you, marked "Complainant's Exhibit Rosenfield's Drawing," and state when you first saw it, if ever?

52 A. I have seen this drawing. It is the one to which I have just referred as having been made in the fall or winter of 1881.

18 Q. Is that your signature on the face of the drawing?

A. That is my signature.

19 Q. When did you place it there?

A. I signed it when I first saw it.

20 Q. After the making of this drawing to which you have just referred do you know of your son having a model made illustrating the invention shown in this drawing?

A. Yes, sir.

21 Q. About when was such model made, as near as you can recollect, and when did you first see it?

A. I can't recollect the exact time.

22 Q. Did you go with your son to the office of Munson & Philipp when he instructed them to apply for letters patent for the invention shown in the drawing, of which you have just been testifying?

A. I am under the impression that I came alone and asked them to apply for a patent for my son's invention.

23 Q. Did you take the model of which you have spoken with you?

A. I did.

24 Q. Will you please look at the model I now hand you, marked Complainant's Exhibit Rosenfield Model, and state whether or not it is the model to which you have referred and which you took to the office of Munson & Philipp, as before stated?

A. It is.

25 Q. You have stated that you were superintendent for the Home Vapor Bath and Disinfector Company. Is this company engaged in the manufacture and sale of apparatus invented and patented by your son?

A. It is.

26 Q. Was this company organized for the special purpose of engaging in this business under your son's patents?

A. It was.

Adjourned to Tuesday, April 21st, 1885, at 11 a. m.

53 Met pursuant to adjournment.

The direct examination of ANTHONY ROSENFIELD continued:

27 Q. When your son first showed you the drawing, Exhibit Rosenfield Drawing, did he explain the invention to you?

A. He did.

28 Q. How did this explanation correspond with the explanation he had given you of the first drawing?

A. Substantially the same.

Cross-examined:

29 X Q. You say that the first drawing was lost. When was it lost?

A. We couldn't find it when we looked for it again.

30 X Q. Was it lost before you first saw Exhibit Rosenfield Drawing?

A. Yes.

31 X Q. What kind of a drawing was it?

A. It was a similar drawing to this, but I think it was on white paper.

32 X Q. Do you remember whether it was a pencil sketch or an ink drawing?

A. I think it was a pencil sketch.

33 X Q. Did you see it made?

A. I can't remember whether I have seen it made or whether it was shown to me after it was made.

34 X Q. You can't say, then, where it was made?

A. It was made in our house. There — where he makes all the drawings or sketches.

35 X Q. How do you know he made it there?

A. Because he had no other place to make them at that time.

36 X Q. Where was his home then?

A. I can't tell you the number; in Fifty-seventh street, half a dozen houses from where we live now.

37 X Q. Do you remember what view or views were in that first drawing?

54 A. As near as I can remember there was three or four different sketches on that same piece of paper for the same invention.

38 X Q. Do you remember what the views were?

A. I remember some of them.

39 X Q. What were those which you remember?

A. I remember a view where there were handles or a handle to pull or push to open and close the gate, and by turning a handle in another direction you could open the gate from the outside.

40 X Q. Did any view show more than one car, according to your recollection?

A. I think it did, but I am not positive.

41 X Q. Do you remember whether you or Joseph Aron first signed Exhibit Rosenfield Drawing?

A. I signed first.

42 X Q. Do you remember how long before he signed?

A. Several months at least.

Redirect:

43 Re-D. Q. You say that you were not certain whether you saw your son make the first drawing or whether you first saw it after it was made. Is it not possible, then, that it may have been made elsewhere than at your house, in case you did not see it made?

A. He might have made it at Edison's, where he was employed, without me knowing anything about it until I saw it.

44 Re-D. Q. Have you read your son's testimony which he has just given in this case?

A. I have not.

A. ROSENFIELD.

Sworn before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned to April 22, 1885, at 10 o'clock a. m.

55 NEW YORK, *April 22d*, 1885—11 o'clock a. m.

Met pursuant to adjournment.

Present: Counsel as before.

JAMES A. HOVEY, Esq., a witness produced on the part of the complainant, being duly sworn, deposes and says:

1 Q. Please state your name, age, residence, and occupation.

A. James A. Hovey; age, thirty-seven years; residence, New York. I am employed in the office of Messrs. Munson & Philipp, the counsel in this case.

2 Q. Please state what, if any, knowledge you have concerning the history of the invention in railway-car gates made by William W. Rosenfield and shown and described in United States letters patent 288,494.

A. On the 8th day of May, 1882, Mr. William W. Rosenfield, accompanied, I think, by his father, brought to the office of Munson & Philipp the model, Exhibit Rosenfield Model, and showed and explained the same to me. He fully explained to me the nature of his invention and the manner in which he intended to apply it and the advantages which he thought it possessed. He told me that the model was intended to illustrate the invention as applied to the cars used upon the elevated railroads in this city, and, although but one gate and its opening and closing mechanism was shown in the model, it was, of course, to be understood that the adjacent platform—a part of which is shown in the model—was to be provided with a

similar gate, and that the adjacent guard rail, shown in the model, was to be provided with a similar opening and closing mechanism. He explained to me that the guard or conductor while standing at the inner ends of the guard rails and in the passage-way leading from one car to the other would by means of this mechanism be able to open or close both gates simultaneously without changing his position, and this, he thought, would be a great saving of
56 labor and would be a very desirable improvement. He also explained to me that by means of this mechanism the guard or attendant could lock both gates as soon as they were closed, thereby preventing passengers from crowding the gates open when the train was in motion and thus running the risk of being injured. He told me that he wished an application for letters patent for the invention to be prepared. I am not certain whether he told me at that time to proceed at once with the application or told me to hold the matter in abeyance until I received further instructions.

My recollection is that he gave positive instructions to proceed at once and file the application, and that — a few days, or it may be a week or two later, either he or his father called again and told me not to proceed with the application just then, but to await further instructions. Nothing more was done by Munson & Philipp about the matter of applying for a patent for the invention until some time very early in the year 1883, when either Mr. Rosenfield or his father again called at their office and instructed me to proceed at once to prepare and file the application. At that time the firm were without a regular draughtsman and considerable delay was occasioned in getting the drawing made, and consequently the application was not prepared and filed until after a considerable time had elapsed.

Cross-examined:

3 X Q. How do you fix the date as the 8th day of May, 1882, that Mr. Rosenfield first called with the model, Exhibit Rosenfield Model?

A. By the date of receiving the case written upon the office file wrapper of Munson & Philipp.

4 X Q. You do not mean to convey the idea that the alleged invention was to reduce the number of attendants upon the trains of the elevated railway when applied thereto, do you?

A. I have no recollection that Mr. Rosenfield stated to me that this would be effected by the use of his invention, and I do
57 not know whether, as a matter of fact, the number of attendants in any case can be reduced by the use of this invention.

JAMES A. HOVEY.

Sworn to before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned to Friday, April 24, 1885, at 11 a. m.

New York, *April 24th*, 1885—11 o'clock a. m.

Met pursuant to adjournment.
Present: Counsel as before.

Mr. Joseph Aron, a witness produced on the part of the complainant, being duly sworn, deposes and says:

1 Q. Please state your name, age, residence, and occupation.

A. Joseph Aron; age, 48 years; I reside in New York; I am an importer of tobacco.

2 Q. Are you acquainted with William W. Rosenfield, to whom the letters patent 288,494 were granted on November 13th, 1883; and if so, how long have you known him?

A. Yes, sir; I have known him for a great many years.

3 Q. When, if ever, did Mr. Rosenfield first explain to you the improvement in railway-car gates shown and described in these letters patent?

A. Certainly as early as in the beginning of the year 1882. He showed me very shortly thereafter a drawing explaining the invention.

4 Q. Did he explain this drawing to you, telling you what the apparatus was it illustrated?

A. Yes, sir.

5 Q. What did he say it illustrated?

A. He said, or rather he explained, that one man could
58 open both gates at the same time, and that if the gates were
closed they could not be opened from the outside. I did not very well understand it from the drawing and asked him to have a cheap little model made. He did so, and showed it to me a few days afterwards.

6 Q. Did he tell you to what class of cars he intended his invention to be applied?

A. Yes, sir; he told me that the gates were especially for the elevated railroad, but in answer to my demand could they not be used for any other cars he said, Yes; they could.

7 Q. Will you please look at the drawing which I now hand you, marked Exhibit Rosenfield Drawing, and state whether you have ever seen it before; and, if so, when you first saw it?

A. I have certainly seen it before April 27th, 1882, as I recollect my signature to the right was put on before I signed it the second time. My other signature, which is above Mr. Rosenfield's, was signed by me on April 27th, 1882. I put on the stamp of Weil & Co. that same day.

8 Q. In your third answer you say, "He showed me shortly thereafter a drawing." Is or is not this exhibit the drawing to which you referred in this answer?

A. Yes, sir; it is.

9 Q. In your answer to question 5 you say that he showed you a model a few days afterwards. Will you please look at this model, Exhibit Rosenfield Model, and state whether or not it is the model which he showed you at that time?

A. It is, with the exception of this small door between the cars, which was not then on.

(Witness refers to the supplemental gate which closes the space between the guard rails when the main gate is open.)

10 Q. When you had seen this model did you fully understand the operation of the invention?

A. Yes, sir.

59 11 Q. Please explain briefly what you then understood to be Mr. Rosenfeld's plan of applying the invention.

A. The invention consisted, as far as I understood it then, of allowing one man to open and close both gates, and when the gates were closed they could not be pushed open from the outside.

12 Q. Please explain just what you mean by both gates.

A. I mean the gates where people enter or go out of the car—that is to say, one man could attend to open and close the gates of two adjoining cars on one side of the cars.

13 Q. Does the model of which you have just been speaking show the gates of two adjoining cars?

A. The model shows the gate on one car.

14 Q. Did you understand that the adjoining car was to be provided with a similar gate and gate-opening mechanism?

A. Yes, sir.

15 Q. After Mr. Rosenfield first showed you this model what was done with it, if you know?

A. It was shown to different parties, among which was Senator Kiernan and Colonel Hain.

16 Q. When was it shown to Senator Kiernan and Mr. Hain, if you know, and under what circumstances?

A. I went to see Senator Kiernan and asked him if he knew anybody connected with the elevated railroad. He told me he knew Colonel Hain very well. I showed him then the model. I told him that is the thing I want to show to Mr. Hain. He gave me a letter for Mr. Hain, and I went to the office of the elevated railway company with Mr. William W. Rosenfield. Mr. Hain, on receipt of Senator Kiernan's letter we sent in, received us immediately. I told Mr. Hain that Senator Kiernan was a friend of mine and thought a great deal of what I am going to show him, and that he told me that Colonel Hain would give me a candid opinion on it. I asked then young Mr. Rosenfield to show this model here (witness refers 60 to Exhibit Rosenfield Model) and to explain everything to Colonel Hain about it. He did so. The Colonel listened very attentively for quite a while. He said afterwards, "Well, that's no account; what we are looking for is to have something between the cars." Mr. Rosenfield answered him, "I can very easily add a gate that will operate simultaneously with this one, so that when one gate is opened the other one is closed, and *vice versa*." Mr. Hain, who at first was very amiable in receiving us, showed signs of impatience, saying, "Well, that's no account; it can't be used." We then left.

17 Q. Did Mr. Hain say anything to you or to Mr. Rosenfield in

your presence which gave you to understand that the invention was not entirely new to him, or that he knew of any other device like it or similar to it?

A. No, sir.

18 Q. This Colonel Hain was at that time superintendent of the elevated railroad, as I understand?

A. Yes, sir. I knew then he was superintendent.

19 Q. When, as near as you can fix the time, was it that you and Mr. Rosenfield called upon Mr. Hain with this model, as you have stated?

A. As near as I can fix it, it was in the month of May, 1882.

20 Q. After you showed the model to Colonel Hain, as you have stated, what was done with it, if you know?

A. I went to Senator Kiernan's office to see him. He was not in, and I remember having left the model there for a few days after that.

Defendant's counsel objects to the testimony as to the conversation with Mr. Hain as hearsay, and generally on the grounds heretofore stated in reference to the testimony given upon the same point by the witness William W. Rosenfield, and the same notice of motion is also here given in regard to the testimony of the present witness, Aron.

61 The objection and notice are made at this time with the consent of complainant's counsel that they should be made at the end of the deposition to avoid repetition to the several questions and answers.

Cross-examined:

21 X Q. Referring to your 6th answer, please state what other cars.

A. He spoke of railway cars on the express trains, on cable roads, and on other cars; I don't remember.

22 X Q. As I understand you, you say that Exhibit Rosenfield Drawing was shown you on the 27th of April, 1882. Do you mean to be understood that you first saw Complainant's Exhibit Rosenfield Model before or after then?

A. Before April 27, 1882; but how long before I can't tell.

JOSEPH ARON.

Sworn before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned to Monday, April 27, 1885, at 11 a. m.

NEW YORK, *April 27th*, 1885—11 o'clock a. m.

Met pursuant to adjournment.

Adjourned to Thursday, April 30th, 1885, at 1 p. m.

62 NEW YORK, *April 30th*, 1885—at 1 p. m.

Met pursuant to adjournment.

Present: Counsel as before.

CHARLES B. KROM, a witness produced on the part of the complainant, being duly sworn, deposes and says:

1 Q. Please state your name, age, residence, and occupation.

A. Charles B. Krom; age, 26 years; I reside in New York city; I am a grocer.

2 Q. Have you ever been employed upon the elevated railroads in this city; and, if so, during about what period and in what capacity or capacities?

A. Yes, sir; as conductor and guard, from the 24th June, 1879, to February, 1885.

3 Q. Are you familiar with the different gates and the manner of operating them in use upon the cars of the elevated railroads during the period when you were employed on the roads?

A. I am familiar with those used on the Sixth Avenue road, which is the only one I was employed on.

4 Q. Please describe the way or ways in which the gates were arranged upon the cars of the Sixth Avenue road during the time which you worked upon the road.

A. They were arranged on hinges fastened to a post, swinging in from the car to the railing.

5 Q. Where was this post to which the gate was hinged located?

A. On the end of the outside corner platform.

6 Q. And the gates swung inward against the platform guard rails. Is that so?

A. Yes, sir.

7 Q. Were these gates provided with any locking mechanism when you first worked upon the road?

A. No, sir.

8 Q. What were your duties as guard and conductor?

63 A. To announce the stations, open and close the car gates, to look after the safety of passengers, to protect the train from the following trains, and to signal the time for the train to start.

9 Q. Now, please state how many gates each guard or conductor had under his control.

A. Four.

10 Q. And how many was he required to open and close each time a train stopped at a station?

A. Two.

11 Q. These two gates that he opened and closed at a time were the two adjoining gates upon different cars, as I understand it, and not the two gates of the same car; am I correct?

A. Yes, sir.

12 Q. Now, please explain just how the guard or conductor would open or close these two gates when a train stopped at a station.

A. He would have to open one gate, step on the next car, and open the other—stand one foot on each car and close both gates at the same time.

13 Q. Could he open both gates simultaneously or without changing his position?

A. No, sir.

14 Q. And could he close both gates at the same time without changing his position?

Objected to as indefinite as to what is meant by a change of position.

15 Q. Question repeated, with the addition that "by changing his position" is meant stepping from one position to another, not merely moving his body or arms without changing the position of his feet.

A. Yes, sir.

16 Q. Please explain just how he could do this?

A. Standing one foot on each car, one hand on each gate, and giving the gates a gentle push.

17 Q. Would he actually move the gates into their closed position by keeping hold of them until they were closed, or would he simply push them so that they would swing closed?

64 A. He would push them so that they would swing closed.

18 Q. Were there any changes made in the gates on the cars upon the Sixth Avenue road during the time which you worked upon that road; and, if so, what was the first change that was made?

A. Yes, sir. The first was locks upon the gates; the second was a spring latch; the third was a lever lock.

19 Q. Please describe what the first locks were and how they were arranged?

A. The first lock was similar to an ordinary door lock, locked with a key.

20 Q. Was there any special advantage gained by the use of this lock, that you know of?

A. No, sir.

21 Q. Why were the gates provided with these locks? What advantage was expected to be gained?

Objected to, as the witness has not been shown to be qualified to testify on these points, but ought to have been in such position as to entitle him to testify on these points.

A. They were supplied so that the rear gate of the rear car and the forward gate of the first car could be kept locked to keep the passengers from getting on or off.

22 Q. Were these locks used to lock the other gates between stations?

A. No, sir.

23 Q. Was there any reason why it was desirable or not desirable that these other gates, through which the passengers got on and off

the train should be kept locked, except at such times as they were opened allowing passengers to get on or off?

A. Yes, sir; there was a reason why it was not desirable to keep them locked.

24 Q. Please explain what this reason was.

A. Loss of time at stations and not safe.

25 Q. Why was it not safe to have them locked?

65 A. In case of an accident, the cars full of passengers rushing out of the cars was the trouble and difficulty. It would be impossible to unlock those gates.

26 Q. Do you mean by those gates that it would be impossible to unlock the gates provided with that particular kind of lock which you described?

A. Yes, sir; the gates with the ordinary lock.

27 Q. You have spoken of a spring latch with which the gates were provided subsequently. Now please describe how this was arranged.

A. A small rod with a ring on the outside of the gate passing through the gate and caught on the gate catch.

28 Q. By gate catch you mean a catch on the end of the car, I suppose?

A. Yes, sir.

29 Q. After the gates were provided with these spring latches were they kept locked or fastened closed between the stations?

A. Not at all times.

30 Q. Was it intended that they should be; were the catches provided for that purpose?

Same objection as to question 21.

A. Yes, sir; that was our orders—to keep them closed.

31 Q. By closed I suppose you mean fastened or latched?

A. Yes, sir.

32 Q. Was there any reason that you know of why the gates should have been kept latched or fastened except while they were opened to let the passengers get on or off?

A. Yes, sir; for the safety of the employees.

33 Q. Please explain how the leaving of the gates unlatched was likely to endanger the employees.

A. By rounding corners frequently the gates would swing open of their own accord unnoticed.

34 Q. Was there any reason that you know of why it was
66 desirable that the gates should be kept latched or fastened up
to the time they were opened by the guard or conductor to allow the passengers to get off and on and should be again latched or fastened as soon as they were closed after the passengers had got off and on and the train was ready to start?

A. Yes, sir; as passengers would frequently try to open the gates after the train had started.

35 Q. Was there any reason why passengers should be prevented from doing this?

A. Yes, sir; for their own safety.

36 Q. Did passengers ever try to open the gates and get on the cars as the trains were entering stations and before they had come to a full stop?

A. Yes, sir.

37 Q. This was also dangerous, I suppose?

A. Yes, sir.

38 Q. You say that you had orders to keep the gates fastened except at such times as they were open to allow passengers to get on and off, and you also say that this was not always done. Why was it that the order was not strictly obeyed, if you know?

A. Negligence on the part of the employees. It consumed time to open them at the stations after the train had stopped.

39 Q. Please explain how it consumed time.

A. By first opening one gate, stepping on the next car to open the other gate.

40 Q. Did it involve any additional labor, aside from this loss of time?

A. Yes, sir.

41 Q. And was it this additional labor and loss of time that caused the employees to sometimes fail to keep the gates fastened?

A. Yes, sir.

42 Q. You have spoken of a lever-locking mechanism that was subsequently applied to the cars on this road. Will you now explain briefly how this mechanism was arranged and operated?

A. (Witness, upon being shown Complainant's Exhibits Defendant's Gates, says:) It is the same mechanism shown in this model.

67 43 Q. As I understand, you operated the gates when they were unprovided with any locking mechanism; also when they were provided with the locks; also when they were provided with the spring latches, and also when they were provided with the mechanism shown in the model which you have just referred to. Now, please state briefly what, if any, advantage you found in using the mechanism shown in the model.

A. A saving of time, labor, and the safety of passengers.

44 Q. Please state how the mechanism to which you have referred effects a saving of time.

A. By standing in one position you can open and close car gates without any overexertion.

45 Q. Do you mean that you can open and close the gates quicker by the use of this mechanism than you could under any of the arrangements that had before existed?

Objected to as leading. Question withdrawn.

46 Q. Does the fact that a car conductor can open the gates by standing in one position effect a saving of time?

Objected to as indefinite as to what time is referred to, whether the time of the stoppage of the train or the time of the employee's labor.

A. Yes, sir.

47 Q. Will you now please explain what you mean by a saving of time?

A. Conductors are allowed a certain number of minutes to make a trip, and the time is determined from terminus to terminus, and unless they make their time they delay the following train, which is liable to crash in their train unless proper signals are displayed at the rear end of the train, which is impossible to do and look after the safety of passengers getting on and off the train at the same time.

68 48 Q. Does this gate-operating mechanism aid the conductors in making the required running time; and, if so, how?

A. Yes, sir; they are allowed to carry a certain number of passengers in each car of the train, and by using this lever lock they can keep passengers from getting on or off at any station.

49 Q. In your 43d answer you state that the use of this mechanism effects a saving of time, and in your 46th answer you state that this saving is effected by reason of his ability to open both gates by standing in one position. Now, please explain just what you mean by a saving of time. A saving of time over what?

A. What I mean by a saving of time is as regards to running time; using the lever-lock gate they can be handled quicker and to a better advantage than a gate without any lock or fastening.

50 Q. What do you mean by any lock or fastening in your last answer?

A. Those used previous to the lever lock.

51 Q. And does this quicker handling of the gates effected by the use of this lever lock give more actual running time to the train between stations?

A. Yes, sir.

52 Q. Now, why is it that the conductor or guard can handle the gates quicker with this mechanism than he could before?

A. Because they are handier and can be worked easier, and can be handled, both gates, at the same time.

53 Q. Now, please explain how it is that the use of this mechanism effects a saving of labor.

A. Because they can be handled standing in one position.

54 Q. Can you give me any idea, by comparison or otherwise, of about how great a saving of labor is effected by the use of this mechanism?

A. I should say there is two-thirds.

55 Q. Now, please state how this mechanism gives greater safety to the passengers.

A. After the gates are closed they cannot be opened by passengers.

69 56 Q. Is the Sixth Avenue road to which you have referred one of the lines of the Manhattan Railway Company?

A. Yes, sir.

Counsel for defendant objects to the testimony elicited for the purpose of showing the advantages of the lever lock as a reopening of the testimony-in-chief and not matter properly in rebuttal.

Cross-examination *de bene esse* by E. H. Browne, Esq.:

57 X Q. Have all the cars of the Manhattan railway been provided with the lever locks?

A. I don't know, sir.

58 X Q. Had they been at the time you ceased working on the elevated road?

A. I don't know, sir.

59 X Q. Do you mean that any change was made in the running time of the trains from terminus to terminus after the fitting of cars with the lever locks?

A. No, sir.

60 X Q. There was none, as I understand you?

A. No, sir; not in the schedule time.

61 X Q. Were all the cars which were run on the Sixth Avenue Elevated railway provided with the lever locks before you left?

A. Yes, sir; all that I worked upon.

62 X Q. As to the others which you did not work on, have you any knowledge so as to be able to state whether they were or were not?

A. I think there was; I couldn't say positively.

63 X Q. In using this lever lock the swing of the lever handle on closing the gate also caused the locking of the gate, did it not?

A. Yes, sir.

64 X Q. One and the same operation of the lever handle effected both the closing and the locking of the gate, as I understand you?

A. Yes, sir; provided they were in order.

70 65 X Q. And the reverse movement of the lever or lever handle unlocked and opened the gate, did it not?

A. Yes, sir.

66 X Q. Then one and the same operation of the lever or lever handle served to unlock and open the gate?

A. Yes, sir.

67 X Q. Do you know when the first of these lever locks was applied?

A. No, sir; not exactly.

68 X Q. Do you remember how long a period was occupied in fitting these lever locks upon those cars to which they were applied?

A. No, sir.

69 X Q. Do you remember, approximately?

A. No, sir.

70 X Q. Why did you leave the employment of the elevated railway?

A. By the advice of my physician.

71 X Q. Were you subpœnaed to testify here?

A. No, sir.

72 X Q. Were all the gates of the cars on which you worked hinged to the platform guard rails?

A. Yes, sir.

73 X Q. At all times?

A. Yes, sir; to the best of my knowledge.

74 X Q. And during the entire time of your employment on the

elevated road each guard or conductor had under his control four gates, and was required to open and close two of them each time a train stopped at a station, as I understand you; am I right?

A. Yes, sir.

75 X Q. Was it not possible for the guard or conductor in operating the gates, which were provided with the spring latches, to unfasten the spring latches first and afterwards reach over and open two adjacent gates while he stood in one place?

A. No, sir.

76 X Q. You never saw that done?

A. No, sir; it is impossible.

71 77 X Q. Was it not possible for a guard or conductor, without walking away from his position between the two cars, to reach over and slide the latches of the gates, so as to unfasten the gates, and afterwards to reach over and swing the gates open?

A. Yes, sir.

78 X Q. And was not that commonly done?

A. No, sir.

79 X Q. But it was done sometimes, was it not?

A. Not that I know of.

80 X Q. Please describe the spring latches more fully.

A. There was a small bar passing through the gates widthwise with a spring connection with a ring on the outer edge near the post to which the gate was hinged.

81 X Q. Can you make a sketch illustrating a side view of the adjacent ends of two cars having gates provided with these spring latches?

A. Yes, sir; in the sketch, A designates the car body, B the wheels, C the gates, D the post to which the gates are hinged, E the latches, and E^1 the rings at the ends of the latches forming the handles by which the latches are operated.

Counsel for defendant offers the sketch in evidence, and the same is marked Defendant's Exhibit Krom's Sketch, April 30, 1885, J. S., examiner.

82 X Q. When were these gates fitted with these spring latches which you have described first used in the cars of the elevated road, to your knowledge?

A. Previous to the lever lock; I don't know the exact time.

83 X Q. How soon after you went to work there?

A. To the best of my knowledge, about two years.

Redirect by J. A. HOVEY, Esq.:

72 84 Re-D. Q. In answer to question 77 you say it was possible for the guard or conductor standing between the two cars to first unlatch and then swing open the two gates without walking away from his position. Now, please explain how he would go to work to do this.

A. By leaning well over to one platform the guard could reach over the guard rail and unlatch the gate of the opposite platform; by then leaning over onto the opposite platform he could with his other hand unlatch the gate of the first platform; by then leaning well over onto one platform and then onto the other he could open their respective gates successively. This was never practiced, to my knowledge.

C. B. KROM.

Sworn to before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned to Friday, May 1, 1885, at 11 a. m.

NEW YORK, *May 1st*, 1885.

Met pursuant to adjournment.
Adjourned to Tuesday, May 12th, 1885, at 12 m.

NEW YORK, *May 12th*, 1885—12 o'clock m.

Met pursuant to adjournment.
Present: Counsel as before.

JOHN H. FAGAN, a witness produced on the part of the complainant, being duly sworn, deposes and says:

1 Q. Please state your name, age, residence, and occupation.

A. John H. Fagan; age, 25 years. I reside at One hundred and forty-third street and Eighth avenue, N. Y. city. I am in the grocery business.

73 2 Q. Have you ever been employed upon the elevated railroads in this city; and, if so, during what period and in what capacity or capacities?

A. Yes, sir; I have been employed by the elevated railroad for about four and a half years ending August, 1884, in the capacity of brakeman and conductor.

3 Q. Upon what line of road did you work?

A. On the Sixth Avenue Elevated railroad.

4 Q. That is one of the lines of the Manhattan Elevated Railway Company, is it not?

A. Yes, sir.

5 Q. Are you familiar with the different gates and the manner of operating them in use upon the cars of this line of elevated road during the period when you were employed by the road?

A. Yes, sir.

6 Q. Please describe the way in which the gates upon the cars were arranged and how they were operated when you first worked upon the road.

A. The gates were fixed so as to open towards one another, and when closed they fastened with a spring catch, which was connected with a rod running the length of the gate, and opened by a short handle screwed to the rod.

7 Q. Where were the gates hinged or to what were they hinged?

A. The gates were hinged to an iron railing on the outer edge of the platform of the car.

8 Q. And when they were open where did they swing to?

A. They swung up to the railing to which they were hinged.

9 Q. You say that they were provided with spring catches connected to a rod running the length of the gate and that this rod had a handle. Where was this handle located with relation to the hinge of the gate?

A. It was located a few inches below the upper hinge.

10 Q. What were your duties as brakeman and conductor?

74 A. The duties of a brakeman or conductor were to take charge of two cars, and he was held responsible for all that occurred on those cars while on duty.

11 Q. Please state what, if anything, it was your duty as brakeman and conductor to do in connection with the gates used upon the cars.

A. The duties of brakeman or conductor are to open and close the gates at every station on the road.

12 Q. How did the conductor or brakeman operate the gates when they were arranged in the manner you have described, and were provided with the spring catches to which you have referred?

A. In going into a station he stepped to one platform and opened the catch of the gate and then stepped back to the other platform and opened the other catch, and when the train had come to a standstill he would open both gates.

13 Q. In opening both gates in this manner was he obliged to step first onto one platform to unfasten and open one gate and then onto the other platform to unfasten and open the other gate, or could he unfasten and open both gates from the same position?

A. The gates could only be opened by stepping on each platform to open them.

14 Q. You say that the guard or conductor would step onto one platform and unlatch one gate and then onto the other platform and unlatch the other gate, and then after the train had come to a stop would open both gates. Was it considered safe and proper to unlatch either of the gates before the train came to a stop?

A. No, sir; but it was done to save time, as it took too much time to unlatch and open them after the train had stopped.

15 Q. Why was it considered unsafe to unlatch either or both of the gates before the train came to a stop?

A. It was considered unsafe to unlatch the gates before coming to a stop on account of the habit passengers had of trying to get on the train before it had stopped.

75 16 Q. Was there any change made in the gates or the manner of operating them while you were employed on the road; and, if so, what was it?

A. Yes, sir; there was. There was a new patent attached to the gates which enabled them both to be opened at the one time.

17 Q. Please explain what you mean by a new patent; do you mean to say that the apparatus was patented?

A. I mean that it was a new fastening that was attached to the gates, and it was understood on the road that it had been patented by the company.

18 Q. Please describe briefly what this new apparatus was and how it operated.

A. An iron attachment which was secured to both gates and which allowed them both to be unfastened and opened at the same time.

19 Q. Where did the brakeman or conductor stand to operate the gates by means of this attachment?

A. He stood in the centre of both platforms and operated both gates standing in the one position.

20 Q. Will you please look at the model I now show you, marked Complainant's Exhibit Defendant's Gates, and state whether or not it represents the apparatus to which you have just referred?

A. Yes, sir; it does.

21 Q. In your experience as a guard and conductor, did you find that the apparatus to which you just referred for operating the gates possessed any advantages over the old system?

A. Yes, sir; a great many.

22 Q. Please state what advantages you found it to possess?

A. It had the advantage of being safer than the old arrangement, and that accidents were not as liable to happen when passengers were trying to board the cars before the trains would come to a stand, and it took a great amount of labor off the conductor or brakeman.

23 Q. Please explain how it took labor off the conductor or brakeman?

76 A. Under the old arrangement the conductor or brakeman had to pass backward and forward, from platform to platform, to open the gates, whereas, under the new arrangement, by standing in the one position he could open and shut his gates.

24 Q. Did you find it effected any saving of time in the opening and the closing of the gates to use this apparatus?

A. Yes, sir; the trains were enabled to make better time on the heavy trips morning and night.

Cross-examined by E. H. Brown, Esq.:

25 X Q. When did you leave the employ of the elevated road?

A. The month of August, 1884.

26 X Q. Why?

A. To go into business.

27 X Q. When was the mechanism which you say was like the model, Complainant's Exhibit Defendant's Gates, put into use?

A. As near as I can recollect, two years ago. I mean two years before I left the road.

28 X Q. How tall are you?

A. Five foot six inches.

29 X Q. Were you subpœnaed to come here and testify?

A. No, sir.

Redirect by J. A. Hovey, Esq.:

30 Re-D. Q. You say the mechanism shown in the model was put into use, as near as you can recollect, two years before you left the road. Have you any positive recollection as to the particular time when you first saw it?

A. None at all. I am not positive of the date, but as near as I can recollect it was two years previous to my leaving the road.

J. H. FAGAN.

Sworn before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned subject to agreement.

77 U. S. Circuit Court, Southern District of New York.

JOSEPH ARON *against* THE MANHATTAN RAILWAY COMPANY.

Proofs for final hearing, taken by consent, on the part of the complainant, in rebuttal, under and pursuant to the sixty-seventh rule of the Supreme Court of the United States, in equity, as amended, before James A. Renwick, one of the standing examiners of this court.

BRISTOL, RHODE ISLAND, *July 27th*, 1885.

Present: M. B. Philipp, Esq., of counsel for complainant; Edwin H. Brown, Esq., of counsel for defendant; Henry B. Renwick, Esq., attends for direct examination on behalf of the complainant.

HENRY B. RENWICK, a witness on behalf of complainant, having been by me first duly cautioned and sworn to testify the truth in the above-entitled action, and being examined by Mr. PHILIPP, deposes as follows:

1 Q. What is your name, age, residence, and occupation?

A. Henry B. Renwick; I am sixty-seven years of age, and reside at No. 29 Park avenue, New York; I am by profession a civil and mechanical engineer.

2 Q. What opportunities have you had to familiarize yourself with mechanical principles, what opportunity to apply such principles in the examination of patented inventions, and what experience in the study of drawings and specifications of inventions and as an expert in matters pertaining to patents?

A. I have been engaged in matters pertaining to civil and 78 mechanical engineering ever since I left college, some fifty years ago, and was instructed in the principles of mechanical drawing, and practised it for many years. I was appointed in 1847 or 1848 principal examiner in the Patent Office, and remained there four or five years, until I resigned, and while there had charge of the subject of civil engineering and land conveyance, including cars, carriages, &c., and their appurtenances. Since that time I have practiced my profession in various branches and have drawn many patents and reissues, and have during the last thirty years been frequently in each year examined as expert in suits in which patents were in question.

Adjourned to meet at the same place to-morrow, July 28th.

BRISTOL, R. I., *July* 28, '85.

Present: Counsel as before.

The witness, HENRY B. RENWICK, attends for further direct examination:

3 Q. Have you examined and do you understand the contents of the following defendant's exhibits in this case: Moore & Thompson patent, Corrigan patent, Cooper patent, Clark patent, Smith patent, Little patent, Brill patent, Stephenson patent No. 2, Stephenson patent No. 3, Stephenson patent No. 1, Castor patent, Hart patent, Wollensak patent, Ferguson patent, Gibbs patent, Brown patent, Douglass patent, Kelso Ludewig's patent, Kidder patent, Stephenson patent No. 4, Madison & McLaughlin patent, and the construction of the devices shown in Brevoort drawing Janney coupler, locomotive cab model and locomotive cab model No. 2, and have you read the depositions in this case of H. A. Webster, W. R. Shannon, C. B. Krom, and J. H. Fagan?

A. I have examined all the patents and models referred to in the question, also the Exhibit Brevoort Drawing of Janney Coupler, 79 and I understand the construction and operation of each of the devices described in the various patents, the structures represented by the models, and also that represented by the Brevoort drawing. I have also read the depositions referred to in the question.

4 Q. Have you read and do you understand the contents of Complainant's Exhibit Complainant's Patent, being U. S. patent No. 288,494? And, if so, state whether or not the invention therein set forth and claimed for opening and closing the gates of railway cars is found in any or all collectively of the exhibits referred to in the previous question, giving your reasons for any opinion you may express.

A. I have frequently examined the Rosenfield patent and understand the invention therein described and referred to in the claims thereof, and in speaking of it will omit all reference to that part of the invention which provides means for closing the spaces between two adjoining platforms, because that part of the invention is not, as I understand it, involved in this controversy. I have seen frequently, and carefully examined in operation in the city of New York, elevated railroad cars provided with this invention of Rosenfield's—(The whole of the last sentence is objected to by counsel for defendant as involving a conclusion of law and not a mere statement of fact on opinion)—not in the precise form shown in the drawing, but in the form shown in Complainant's Exhibit Defendant's Gate. Prior and since the introduction of such gate, and more carefully within the last two or three months, I examined the mode of operating gates on the same railroads which were not provided with the Rosenfield invention, and the motions of the guard in operating them corresponded substantially with those described in the testimony herein, both of complainant and defendant, there being no one place in which the guard was able to stand and perform 80 all the operations necessary in opening and closing the gates

of two adjoining platforms. The invention of Rosenfield was primarily in the idea of locating two handles upon or near the guard rails of two adjoining cars and in such proximity to the inner or passage-way end of this rail that the guard standing in the passage-way could not only reach and act upon both of these handles simultaneously and without changing his position, but could also, by means of proper connections between their handles and the gates, open or close both gates simultaneously or at different times without leaving his position in the gangway. Of course, the mere idea was not a invention, but Rosenfield went further and provided proper means of combining the gates with the handles, as set forth in his patent, and the patent shows operative machinery for carrying out the original idea. I do not understand that the first and second claims of the patents are limited to any particular mechanism for making the operative connection between the handles and the gates, so long as these means are known substitutes of or equivalents for the means specially described in his patent or suggested as modifications of these means; but, nevertheless, there are certain limitations of the invention: First, the handles must be on or near the guard rails for two reasons—first, to be out of the way of the incoming or outgoing passengers; and, second, to be within reach, simultaneously if necessary, of the two hands of the guard standing in the passage-way or near thereto. Second, the gates must swing into or onto the platform to open and outwards over the floor of the platform to shut, provided they are swinging gates. If the gates, as suggested, be sliding gates, then it is evident to any person who has looked into this subject that the gates must lie alongside of the car body when open, and must in closing slide from the car body endwise from the car toward the guard rail, because there is no room between the car platforms for such sliding gate, and consequently they cannot lie between the platforms when open. Now, after having examined carefully all the models and exhibits, I cannot find that any of them gives the slightest sugges-
81 tion of the idea of a handle located on or near the guard rail, as before set forth, so that a guard might stand out of the way of entering and leaving passengers and operate the gate on that side of the car which is the nearest the station platform; nor do any of them give the slightest hint of locating two such handles and their gate-operating apparatus on the adjacent guard rails of two adjacent cars, whereby the guard can not only keep out of the way of incoming and outgoing passengers from two cars, but also open or shut either gate without leaving or substantially altering his position in the passage-way or near thereto.

These ideas, as before said, were the basis of the invention, and after the idea had once entered into the head of an inventor, it was easy for a competent mechanic, especially with the aid of the state of the art, to devise means for connecting the gates with the handles, so that when motion was applied to the handles it would be properly communicated in such manner as to open or close the gates. In this connection, however, it must be observed that there is not a single one of the contrivances described in any of the patents or represented in the drawings or models with the exception of the contrivances shown in locomotive cab model No. 2, which could, unless more or less altered, be used to make the proper connection between Rosenfield's handle and Rosenfield's gate, so as to operate it in the proper manner; and I repeat that none of the patents, models or drawings present or even suggest the idea which lies at the basis of and when carried out is Rosenfield's invention, and that none of them, except locomotive cab model No. 2, show any device by means of which the idea could have been carried out, unless such devices were altered and changed so as to fit them for performing the duties necessary in carrying out Rosenfield's ideas.

The connection between the handle and the door in locomotive cab No. 2 could be used for this purpose, provided they were connected, as shown in the model, to the gate, and not, as I understand from the testimony was really the case, to a wicket or window
82 hinged fast to the gate; but the model, even as it stands, does not suggest or convey the idea of locating the handle in the positions and for securing the purposes which result from Rosenfield's location of the handle, and no man from looking at this cab model would be led to make Rosenfield's invention, unless he had first conceived or had had suggested to him Rosenfield's idea, and probably also the advantages resulting when that idea was carried into practice.

I have no hesitation in stating that none of the old things to which I have been referred in the question, or all collectively, describe or even suggest Rosenfield's invention.

5 Q. In view of the state of the art as shown to exist by the exhibits referred to in the last question, what is your opinion as to whether there is anything new and patentable in the invention set forth and claimed in the patent No. 288,494, and whether invention was required to produce the same?

A. In my opinion, as will appear from what I have stated in my last answer, invention was required to produce the apparatus described and claimed in the Rosenfield patent, and that the invention was new and patentable in view of the exhibits referred to in the last question.

6 Q. Have you examined Defendant's Exhibit Model Brevoort No. 2, and do you understand the construction of the apparatus for operating the gates marked Hart gate & Little gate?

A. I have examined it and do understand the construction of the apparatus referred to in the question.

7 Q. Mr. Brevoort, defendant's expert, says that the "Hart gate" and its opening and closing devices is an almost literal copy of the Hart patent, No. 163,770, while the "Little gate" is almost a literal copy of that which is shown in the patent to Little, No. 140,052. What is your opinion with reference to those statements by him?

A. A comparison of the two contrivances with the two patents demonstrates easily that the opinion is not a correct one. In
83 the Hart patent the operating handle sticks out from the end of the car body, where it would be directly in the way of passengers getting on and off if passengers were admitted to the front platform on a bob-tail car, such as is set forth in this patent, whereas

in the Brevoort model the handle is fastened in Rosenfield's position upon the guard rail. In the patent the handle revolves in a vertical plane, and must do so, whereas in the model the handle revolves in a horizontal plane.

In the Hart patent the shaft, which is partially rotated by the handle, is a horizontal shaft and extends the whole length of the car from front to rear, while in the model the shaft moved by the handle is a vertical shaft, does not extend from end to end of the car, but is entirely outside of it, and is mounted upon the guard rail. In the Hart patent the toggle which moves the door works up and down in a vertical plane and is enclosed in the hollow of the rear wall of the car, whereas in the model the toggle which moves the door moves in a horizontal plane; is located outside of the car and beneath the platform. In the Hart patent the toggle is connected to the back of the door itself and about the middle of its height, and in the model it is connected to a rod depending from the bottom of the door.

In the Hart patent the toggle when extended or while being extended tends to shut the door. In the model the toggle while being extended or opened into a straight line tends to open the door. All parts of the contrivance are changed in position relatively to each other, except the relative position of the two arms of the toggle. By means of these transmutations a contrivance — for opening the rear door of a car by the driver standing on the front platform, and the whole length of the car from the door is transformed into an apparatus by means of which a guard can open, not a car door, but the platform gate of the very platform upon which he is standing; and, finally, when the contrivance of the Brevoort model has thus
been transformed, it would be useless, because when cars were
84 turning on curves and the corners of their platforms were
coming in contact or nearly so and sliding past one another,
as I know by observation that they do, then the toggles of one car when the gates were shut would strike the toggles of the other car and one or both of them be broken.

Turning now to the "Little gate," end of Brevoort model No. 2, and comparing it with the patent, it appears that in the model the transverse sliding door of the car has been transformed into a longitudinally sliding platform gate; second, that the handle and drum of the Little patent have been transferred from the opposite end of the car to the same end of the car on which the door is mounted; third, that two of the pulleys of the Little patent, n^1 and p, have been dispensed with; also that the arrangement of the cords has been altered, the cords forming nearly a quadrangle in the Little patent and a triangle in the model, and by means of these transformations a contrivance for opening a rear door from a front platform has been converted into a contrivance for operating a platform gate from the same platform that the gate closes and not from the opposite end of the car. It may be said, in answer to these comments upon the Brevoort model No. 2, that if you suppose the floor of the Little patent car to be a platform of an ordinary car and thus turn the whole apparatus around 180 degrees bodily, so that the car door of

Little becomes a platform gate, that then the model would correctly represent the Little patent under the supposition just stated; but this is not so, because it that event the handle *r* and shaft R of the Little patent would stand directly in the centre of the platform, measuring from the car to the platform rail, and two such handles and shafts, which would be necessary on a car, would practically (although it might be possible to squeeze past them) prevent the egress and ingress of passengers.

85 In the Brevoort model the handle and crank have been shifted from this supposed position of Little to the platform rail, and thereby all the advantages of the Rosenfield invention have been obtained.

I repeat that both Little and the Hart patent provide means for operating the rear car door by means of a handle operated at the opposite end of the car, and that they have been transformed in the Brevoort model into contrivances for operating a platform gate by means of a handle on the same end of the car; and not only this, but, further, the handles have been located in the position defined by Rosenfield, so that all the advantages accruing from his invention have been attained; and I will say, in conclusion, that neither the Hart nor Little patent contain any hints or suggestions of changes made by Mr. Brevoort, or of any other changes by means of which the Hart and Little contrivances could be transformed so as to anticipate Rosenfield's invention.

8 Q. Have you examined that part of the model Brevoort No. 1 marked Corrigan gate, and have you read that part of Mr. Brevoort's deposition in this case having special regard to those portions which refer to changes that have been made in the model from the apparatus shown in the Corrigan patent? And, if so, state whether such changes have been made in said model.

A. I have examined the part of the model referred to and have read the deposition of Mr. Brevoort regarding the changes made in transforming the apparatus of the Corrigan patent into the Corrigan model, and such changes as he testifies to have been made in making said model.

9 Q. In your opinion, would it have required invention to have made the changes from the apparatus of the Hart, Little, and Corrigan patents to convert such apparatus into the apparatus of the Hart and Little gates of Brevoort model No. 2 and the Corrigan gate of Brevoort model No. 1, respectively, prior to the date of the Rosenfield patent?

A. Yes; I have no doubt it would.

86 10 Q. Does the description in the specification of the Rosenfield patent, from line 39 to line 56, inclusive, on page 2 of the printed copy of the specification, convey sufficient directions to you to practically construct that modification of his apparatus in which the gates are hinged to the end of the car and lie against the body of the car when they are open without invention on your part?

A. I have frequently read not only the specification as a whole, but the lines referred to in the question, and the latter inform me

how to make the modification without any invention on my part; and I will here say that it is evident to any one reading the patent that lines 39 to 49, inclusive, must be taken in connection with the following lines in order to get a full description of the modification referred to in the question. In making this modification the posts which form the back of the gates are to be provided at their lower ends with arms corresponding to the levers *d*, and the links and rods shown in the drawings are to be attached to these levers, but beneath the platform and on the side nearest the car body, supported, of course, as when arranged above the platform. Then there is to be provided, in accordance with lines 47, 48, and 56, a lever arranged in close proximity or upon the guard rail of the platform, this lever being provided with a handle which will occupy substantially the positions of the handles *h*. Now, under this construction as far as stated, it is clear that if a person could get his hand under the platform and take hold of the rod *f* he could open and shut the gate, and it is also clear that moving the handle on the lever would cause the lever to move beneath the platform. Now, all that is necessary to make the lever move the rod *f* and consequently the gate is to apply some well-known mechanical connection traversing the under side of the platform between the lower end of the lever and the rod *f*. Now, this may be done in several ways—either by a simple diagonal link between the lower part of the lever and the rod *f*, or by putting in a rock shaft with two arms, said rock shaft extending
across the platform and having one of its arms connected
87 with the rod *f* and the other with the end of the lever; or
by stepping the lever in the rock shaft and having the rock shaft arm on its further end connected with the rod *f*; or a rack might be formed on the rod *f*, located as it is beneath the platform, and it might be worked by a segment pinion mounted on an oscillating shaft transverse to the platform, said shaft being oscillated by the lever whose handle is located near the guard rail; or, if the lever was pivoted at about or above the platform level, its lower end might be bent beneath the platform and connected by a simple link with the rod *f*. Any one of these structures would practically carry out the suggestions of the patent, and they are all known ways of transferring the motion derived from a lever to a locality out of the plane in which the lever operates. All these modifications are means for operating the gate when hinged to the end of the car by means of a lever and handle located on or in close proximity to the guard rail.

11 Q. Please examine the file wrapper and contents in the matter of the application of Thos. W. Peeples, filed May 21, 1884, and state whether or not it describes and shows the apparatus used by the defendant herein, as illustrated by Complainant's Exhibit Defendant's Gates, and the way that apparatus works and the advantages incident to its use.

Objected to as immaterial and irrelevant and as incompetent, because it is not evidence that can bind or affect the defendant in this suit, the defendant not being privy with Peeples.

A. I have examined the file wrapper and contents referred to in the question, and it does describe the apparatus illustrated by the model referred to in the question and which I have seen in use on the elevated railroads in New York. This file wrapper and contents also describes the advantages resulting from the use of this contrivance.

Same objection.

88 The file wrapper and contents referred to in the question is offered in evidence on the part of complainant, and the same is marked Complainant's Exhibit Peeples' File Wrapper and Contents, J. A. R., examiner.

Same objection.

12 Q. State whether or not, in your opinion, there is a patentable distinction or difference between the combination referred to in the first claim and the combination referred to in the second claim of Complainant's Exhibit Complainant's Patent.

A. In my opinion there is. The apparatus claimed in the first claim is useful only in permitting the guard to perform all the necessary operations upon one gate while standing in a position out of the way of passengers either crowding the platform or getting either in or out of the car, while by the use of the combination set forth in the second claim a single guard having charge of two adjacent platforms of two different cars can operate both the platform gates on the station side of the platform as quickly and as easily as two guards could do them and at the same time be out of the way of the passengers of both cars. If the second claim had been to the combination of two gates and their operating contrivances on the same platform and on opposite sides of the same car, then I should have considered the second claim to be one to a duplication of the apparatus of the first claim and an unnecessary claim, because a car-builder who did not use cars coupled together would be equally an infringer of the first and second claims if the second claim had been altered as supposed, whereas, as the claims now stand, a car-builder would not be an infringer of the second claim, even though he might be an infringer of the first.

HENRY B. RENWICK.

Subscribed and sworn to before me—

JAMES A. RENWICK,
U. S. Examiner.

89 United States Circuit Court, Southern District of New York.
In Equity.

JOSEPH ARON *against* THE MANHATTAN RAILWAY COMPANY.

Testimony in rebuttal taken on the part of the complainant, under and pursuant to the sixty-seventh rule of the Supreme Court of the United States, in equity, as amended, before Thomson H. Palmer, notary public, to be read at the hearing hereof with the same force and effect as if taken before an examiner of this court by consent of counsel for the respective parties.

NEW YORK, *Sept. 19th*, 1885—2 o'clock p. m.

Present: Messrs. Munson & Philipp, counsel for complainant, and Edwin H. Brown, Esq., counsel for defendant.

JOHN J. KIERNAN, Esq., a witness produced on behalf of the complainant, being duly sworn, deposes and says:

1 Q. What is your name, age, residence, and occupation?

A. John J. Kiernan; age, 39 years. I reside in Brooklyn, New York, and am a telegraphic news agent.

2 Q. Are you acquainted with Joseph Aron, the complainant in this suit; and, if so, how long have you known him?

A. I am. I have known him about ten years.

3 Q. Are you acquainted with Wm. W. Rosenfield; and, if so, how long have you known him?

A. I am not acquainted with him, though I have seen him once or twice during the past two years.

90 4 Q. Has your attention ever been called to any invention in apparatus for opening and closing the gates of railway cars made or said to have been made by Wm. W. Rosenfield? And, if so, please state when and under what circumstances your attention was first called to such invention.

A. My attention was called to an apparatus of this character in the spring of 1882, about the month of March or April. It was under the following circumstances: Mr. Joseph Aron came to me with a small tin model representing an apparatus for opening and closing the gates of railway cars and said it was the invention of a young man by the name of Rosenfield, and after explaining the model to me asked me if I knew any one connected with the elevated railroads to whom he or Mr. Rosenfield could submit the invention with a view to having it adopted and put in use by those roads. I told him I was acquainted with Col. F. K. Hain, the general manager of the roads, and then at his request I gave him a letter of introduction to Col. Hain.

5 Q. When, if ever, was your attention next called to this matter, and under what circumstances?

A. A day or two after I gave the letter of introduction to Mr. Aron, or it may have been later on the same day, he came to my office again with the model and left it there and it remained there for several days. During the time it remained in my office Col.

Hain came in once, and he and I looked at the model and talked of the merits of the invention.

Objected to as not proper rebuttal, but as amounting to a reopening of the testimony-in-chief and as new matter not warranted by the testimony taken on the part of the defendant and as without foundation, and notice is hereby given that a motion will be made to strike out said testimony or for leave to answer the same.

6 Q. What did Col. Hain say in regard to the utility of the apparatus shown in the model?

Objected to for the reasons above stated and, further, as calling for hearsay.

91 A. He said substantially that the idea was an old one and was in use or being used on some of the Western roads, and that, in his opinion, there was nothing new in it. He said nothing in regard to the utility of it.

Objection renewed as to answer.

7 Q. Will you please look at the model which I now hand you, marked "Complainant's Exhibit Rosenfield Model," and state whether or not it is the tin model of which you have spoken, which Mr. Aron left at your office, and which Col. Hain saw there?
A. It is the same model or one exactly like it.

JOHN J. KIERNAN.

Attest: THOMSON H. PALMER,
Notary Public.

92 COMPLAINANT'S EXHIBIT COMPLAINANT'S PATENT. August 13th, 1884. J. A. S., Ex'r.

ARON *vs.* THE MANHATTAN RAILWAY CO.

(2-175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted to Joseph Aaron November 13, 1883, number 288,494, for improvement in railway-car gates.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this 15th day of March, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

[SEAL.] BENJ. BUTTERWORTH,
Commissioner.

(No Model.)

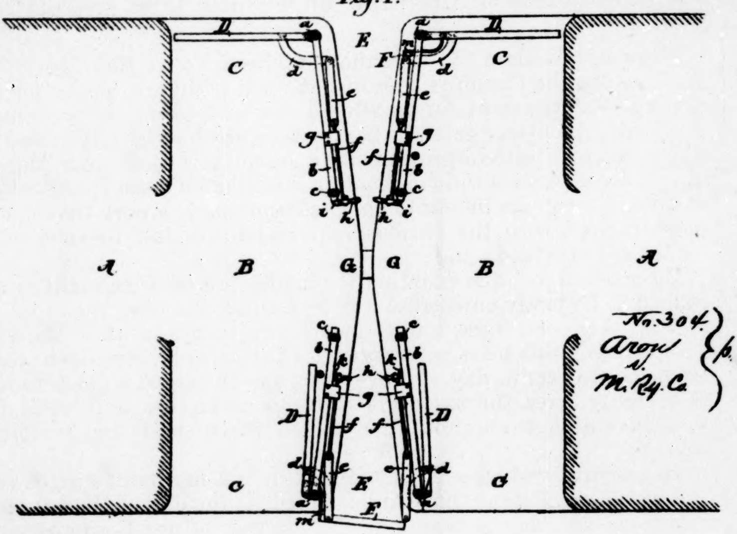
94

W. W. ROSENFIELD.

RAILWAY CAR GATE.

No. 288,494. Patented Nov. 13, 1883.

Fig. 1.



No. 304.
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v.
M. Ry. Co. } p. 94

Fig. 3.

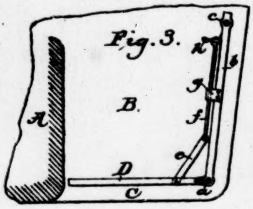
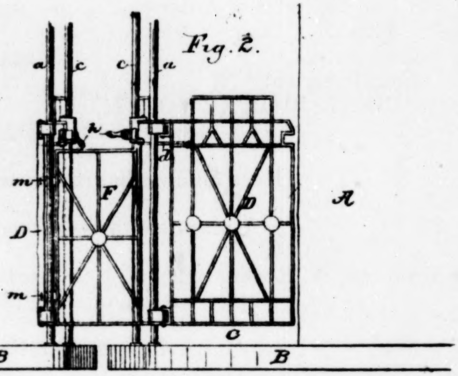


Fig. 2.



A

C

Witnesses:

A. N. Jesbera.

J. A. Hovey

Inventor:

Wm. W. Rosenfield,

by his Attorneys

Munson & Philipp

(2–155.)

No. 288,494.

The United States of America to all to whom these presents shall come:

Whereas William W. Rosenfield, of New York, New York, has
presented to the Commissioner of Patents a petition praying for the
grant of letters patent for an alleged new and useful improvement
in railway-car gates, he having assigned his right, title, and in-
93 terest in said improvement to Joseph Aron, of same place, a
description of which invention is contained in the specification,
of which a copy is hereunto annexed and made a part hereof, and
has complied with the various requirements of law in such cases
made and provided; and

Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said
94 Joseph Aron, his heirs or assigns, for the term of seventeen years
from the thirteenth day of November, one thousand eight hundred and eighty-three, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of Washington, this thirteenth day of November, in the year of our Lord one thousand eight hundred and eighty-three, and of the Independence of the United States of America the one hundred and eighth.

[SEAL.] M. L. JOSLYN,
Acting Secretary of the Interior.

Countersigned.
BENJ. BUTTERWORTH,
Commissioner of Patents.

(Here follows diagram marked page 94.)

95 UNITED STATES PATENT OFFICE.

WILLIAM W. ROSENFIELD, of New York, N. Y., assignor to Joseph Aron, of same place.

Railway-Car Gate.

Specification forming part of Letters Patent No. 288,494, dated November 13, 1883; application filed April 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, William W. Rosenfield, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful improvements in gates for railway-cars, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In many classes of railway-cars, and particularly in those used upon the elevated and other city railways, it has been found necessary, in order to prevent passengers from falling from the train, and also to prevent persons from attempting to get off or on a car while in motion, to provide the entrances to the car-platforms with gates, by which they can be closed except at the proper times. These gates are usually in charge of a guard or attendant, whose duty it is to close the gates before the train commences to move, and to open them only after the train has come to a full stop. As there is usually but one guard or attendant stationed between each two adjoining cars, it follows that to open or close both gates he must pass around from one to the other of the adjoining platforms. This passing from one platform to the other, besides being a source of annoyance to the guard, occasions some delay, which is very annoying to the passengers, particularly at times when a large number are required to get off or on a car in a very short time.

It is the object of the present invention, among other things, to provide means by which the guard or attendant can, without changing his position, open or close both gates simultaneously and with the least possible delay.

To that end one feature of the invention consists in providing the gates with connections so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passage-way leading from one of the cars to the other.

In order to adopt cars to run upon a track in which there are abrupt or comparatively abrupt curves, which is the case with most city railways, it is necessary that the platforms should be so constructed as to leave considerable open space at the sides between the platforms of two adjoining cars when they are standing upon a straight track. This open space has frequently been the cause of serious accidents to persons who have been crowded from the station-platform and fallen between the platforms of the cars.

Another object of the present invention is to provide means by which this danger shall be avoided; and to this end another feature of the invention consists in providing a gate which can be operated, in connection with one of the platform-gates, to close this space and prevent persons from falling or being crowded into the same while the train is standing at a station.

In the accompanying drawings, figure 1 is a plan view of the adjoining platforms of two cars, showing the gates upon one side open and those upon the opposite side closed, the gates being provided with an opening and closing apparatus embodying the present invention. Fig. 2 is a side elevation of the same, one of the gates being closed; and Fig. 3 is a plan view illustrating a modification in the opening apparatus to be hereinafter explained.

Referring to said drawings, it is to be understood that A A represent two ordinary railway-cars, and B B the adjoining platforms thereof, C C being the usual entrances from the station-platform, and D D gates of the ordinary construction for closing said entrances.

The gates D are hinged, in the usual manner, to posts *a*, rising from the corners of the platforms and close against the usual jambs (not shown) projecting from the sides of the cars. The platforms B are provided, as shown in Fig. 1, with the usual guard-railings, *b*, extending inward from the posts *a* to similar posts, *c*, which are located a sufficient distance apart to leave a passage-way, G, from one car to the other. When the gates are thus arranged, it is necessary, as will readily be seen, in order to close or open both gates, for the guard to pass from one platform around the post *c* to the opposite
platform, thus causing some delay in opening or closing one
96 of the gates, and adding to the labor of the guard, and causing annoyance to the passengers. In order to avoid this each of the gates is provided, at a suitable distance from its hinge, with a curved lever, *d*, which extends rearward and terminates a short distance outside of the railing *b*. This lever is connected by a link, *e*, with a rod, *f*, which slides freely in or on a suitable bearing, as *g*, secured to the railing *b*, and is provided at its inner end with a handle, *h*, by which it can be operated. From this arrangement it will be seen that the guard or attendant, while standing in the passage-way G, can, by grasping the two handles *h* and pushing or pulling the rods *f*, open or close both of the gates simultaneously and without loss of time. The rods *f* will preferably be provided with some form of locking mechanism by which the gates can be fastened in their opened or closed positions. Such locking may be accomplished by having the handles *h* pivoted to the rods *f*, as shown in the present case, and provided with extensions *i*, which can be turned so as to extend in front of the posts *c* and hold the gates closed, as shown at the top of Fig. 1, or so as to lie in the rear of lugs *k* and hold the gate open, as shown at the bottom of said figure.

Although it is preferable that the rods *f* and links *e* should be arranged upon the outside of the railings *b*, as shown in Figs. 1 and 2, as in this position they will be entirely out of the way, and will not prevent the gates from swinging back against the railings *b*, yet this arrangement is not necessary. The rods and links may, as shown in Fig. 3, be arranged upon the inside of the railings, in which case the levers *d* may be dispensed with, the links *e* being attached directly to the gates.

It will also be seen that the connections for operating the gates may, if desired, be placed beneath the platforms. This can readily be accomplished by causing the rods or posts upon which the gates swing to extend below the platforms, and providing their lower ends with arms corresponding to the levers *d*. The links *e* and rods *f* may then be located beneath the platforms and operated by pivoted levers, the upper ends of which will occupy substantially the positions of the handles *h*.

If preferred, the gates may be hinged at their opposite ends, so as to lie against the body of the car when open, in which case the connections beneath the platforms will only require such modification as is necessary to change the direction of the motion derived from the operating-levers. In some cases, also, it may be preferable to provide sliding instead of swinging gates. Such gates can readily be operated in the same manner by a very slight modification in the connections. In cars of this class it is necessary, as has been explained, that a considerable space, E, should be left between the sides of the adjoining platforms. In order to prevent persons from falling or being crowded from the station-platform into this space, one of the two adjoining gates D is provided with two or more arms, *m*, similar in shape to the levers *d*, to the ends of which is attached a gate, F, which extends at substantially right angles to the gate D, as shown in Fig. 1. From this arrangement it results that when the train is in motion and the gates D are closed the gate F will be swung to the position shown at the top of Fig. 1, so as to lie close to the railing *b*, and not interfere with the movement of the cars in passing around curves. As soon, however, as the train arrives at a station and the gates D are opened, the gate F will be swung to the position shown at the bottom of said figure, so as to close the space E and prevent persons from being crowded therein.

It is not necessary, as will readily be seen, that the gates F should be secured to the gates D by means of the arms *m*, as they may be secured to or made to operate in connection with said gates in any convenient or desirable manner.

What I claim is—

1. The combination, with a gate arranged to close the side entrance to a car-platform, of an operating-handle located at or near the inner end of the platform guard-rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard-rail, substantially as described.

2. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of operating-handles located at or near the inner ends of the platform guard-rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard-rails, substantially as described.

3. The combination, with a railway-car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a gate for closing said entrance, a rod, as *f*, sliding in or on guides secured to said guard-rail, and a link, as *e*, connected to said gate and rod, all substantially as described.

4. The combination, with a railway car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a swinging gate for closing said entrance, a rod, as *f*, sliding in or on a guide secured to said rail, a link, as *e*, connected to said gate and rod, and means for locking said gate in its closed position, all substantially as described.

5. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of rods, as *f*, sliding in or on guides secured to the guard-rails of said platforms, and links, as *e*, connected to said gates and rods, substantially as described.

97 6. The combination, with gates, as D, arranged to close the side entrances to the adjoining platforms of two cars, and a gate, as F, arranged to close the space between said platforms,

of operating-handles located at or near the inner ends of the platform guard-rails, and means connecting said gates and handles, whereby the attendant may open and close said gates simultaneously while standing at the end of said rails, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WM. W. ROSENFIELD.

Witnesses:
JAS. A. HOVEY.
T. H. PALMER.

98 COMPLAINANT'S EXHIBIT ROSENFIELD'S APPLICATION, April 18, 1885. J. A. S., Ex'r.

ARON *vs.* THE MANHATTAN R. W. CO.

(2-175.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the files of this office of the file wrapper, contents, and drawing in the matter of the application for letters patent granted William H. Rosenfield, assignor to Joseph Aron, November 13, 1883, number 288,494, for improvement in railway-car gates.

In testimony whereof I, R. G. Dyrenforth, acting Commissioner of Patents, have caused the seal of the Patent Office to be affixed this 24th day of July, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and ninth.

[SEAL.] R. G. DYRENFORTH,
Acting Commissioner.

99 *Letter of Transmittal.*

NEW YORK, *March* 31, 1883.

Hon. Comm'r of Patents.

SIR: We herewith transmit a specification—one sheet of drawings—relating to the application of Wm. W. Rosenfield for letters patent of the United States for improvement in gates for railway cars. Our check for $15, the first Government fee thereon, is sent herewith.

Very respectfully, MUNSON & PHILIPP,
Temple Court, 7 Beekman St., New York, N. Y.

P. O. box 1648.

(Endorsed:) Patent Office, Apr. 3, 1883.

Petition.

To the Honorable Commissioner of Patents:

Your petitioner, a citizen of the United States, residing at New York, in the county of New York and State of New York, prays that letters patent of the United States be granted to him for the invention in car gates set forth in the annexed specification, and he hereby appoints Henry T. Munson and Moritz B. Philipp (of the firm of Munson & Philipp, 239 Broadway, New York, P. O. box 1648) his attorneys, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

WM. W. ROSENFIELD.

100 ### *Specification.*

To all whom it may concern:

Be it known that I, William W. Rosenfield, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful improvements in gates for railway cars, fully described and represented in the following specification and the accompanying drawing forming a part of the same.

In many classes of railway cars, and particularly in those used upon the elevated and other city railways, it has been found necessary, in order to prevent passengers from falling from the train and also to prevent persons from attempting to get off or on a car while in motion, to provide the entrances to the car platforms with gates by which they can be closed, except at the proper times. These gates are usually in charge of a guard or attendant whose duty it is to close the gates before the train commences to move and to open them only after the train has come to a full stop. As there is usually but one guard or attendant stationed between two adjoining cars it follows that to open or close both gates he must pass around from one to the other of the adjoining platforms.

This passing from one platform to the other, besides being a source of annoyance to the guard, occasions some delay which is very annoying to the passengers, particularly at times when a large number are required to get off or on a car in a very short time.

It is the object of the present invention, among other things, to provide means by which the guard or attendant can without changing his position open or close both gates simultaneously and with the least possible delay. To that end one feature of the invention consists in providing the gates with connections, so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passage-way leading from one of the cars to the other.

101 In order to adapt cars to run upon a track in which there are abrupt or comparatively abrupt curves, which is the case

with most city railways, it is necessary that the platforms should be so constructed as to leave considerable open space at the sides between the platforms of two adjoining cars when they are standing upon a straight track. This open space has frequently been the cause of serious accidents to persons who have been crowded from the station platform and fallen between the platforms of the cars.

Another object of the present invention is to provide means by which this danger shall be avoided, and to this end another feature of the invention consists in providing a gate which can be operated in connection with one of the platform gates to close this space and prevent persons from falling or being crowded into the same while the train is standing at a station.

In the accompanying drawings, figure 1 is a plan view of the adjoining platforms of two adjoining cars, showing the gates upon one side open and those upon the opposite side closed, the gates being provided with an opening and closing apparatus embodying the present invention; figure 2 is a side elevation of the same, one of the gates being closed, and figure 3 is a plan view illustrating a modification in the opening apparatus, to be hereinafter explained.

Per A.

Referring to said drawings, it is to be understood that A A represent two ordinary railway cars, and B B the adjoining platforms thereof, C C being the usual entrances from the station platform, and D D gates of the ordinary construction for closing said entrances. The gates D are hinged in the usual manner to posts *a* rising from the corners of the platforms and close against the usual jambs (not shown) projecting from the sides of the cars. The platforms B are provided, as shown in figure 1, with the usual guard railings *b* extending inward from the posts *a* to similar posts *c*, which are located a sufficient distance apart to leave a passage-way, G, from one car to the other.

102 When the gates are thus arranged it is necessary, as will readily be seen, in order to close or open both gates, for the guard to pass from one platform around the posts *c* to the opposite platform, thus causing some delay in opening or closing one of the gates and adding to the labor of the guard and causing annoyance to the passengers.

In order to avoid this each of the gates is provided, at a suitable distance from its hinge, with a curved lever, *d*, which extends rearward and terminates a short distance outside of the railing *b*. This lever is connected by a link, *e*, with a rod, *f*, which slides freely in or on a suitable bearing, as *g*, secured to the railing *b*, and is provided at its inner end with a handle, *h*, by which it can be operated.

From this arrangement it will be seen that the guard or attendant, while standing in the passage-way G, can, by grasping the two handles *h* and pushing or pulling the rods *f*, open or close both of the gates simultaneously and without loss of time.

The rods *f* will preferably be provided with some form of locking mechanism by which the gates can be fastened in their opened or closed positions. Such locking may be accomplished by having the handles *h* pivoted to the rods *f*, as shown in the present case, and provided with extensions *i*, which can be turned so as to extend in front of the posts *c* and hold the gates closed, as shown at the top of figure 1, or so as to lie in the rear of lugs *k* and hold the gates open, as shown at the bottom of said figure.

Although it is preferable that the rods *f* and links *e* should be arranged upon the outside of the railings *b*, as shown in figures 1 and 2, as in this position they will be entirely out of the way and will not prevent the gates from swinging back against the railings *b*, yet this arrangement is not necessary; the rods and links may, as shown in figure 3, be arranged upon the inside of the railings, in which case the levers *d* may be dispensed with, the links *e* being attached directly to the gates.

103 It will also be seen that the connections for operating the gates may, if desired, be placed beneath the platforms. This can readily be accomplished by causing the rods or posts upon which the gates swing to extend below the platforms and providing their lower ends with arms corresponding to the levers *d*. The links *e* and rods *f* may then be located beneath the platforms and operated by pivoted levers, the upper ends of which will occupy substantially the positions of the handles *h*. If preferred, the gates may be hinged at their opposite ends, so as to lie against the body of the car when open, in which case the connections beneath the platforms will only require such modification as is necessary to change the direction of the motion derived from the operating levers. In some cases, also, it may be preferable to provide sliding instead of swinging gates. Such gates can readily be operated in the same manner by a very slight modification in the connections.

In cars of this class it is necessary, as has been explained, that a considerable space, E, should be left between the sides of the adjoining platforms. In order to prevent persons from falling or being crowded from the station platform into this space one of the two adjoining gates D is provided with two or more arms, *m*, similar in shape to the levers *d*, to the ends of which is attached a gate, F, which extends at substantially right angles to the gate D, as shown in figure 1.

From this arrangement it results that when the train is in motion and the gates D are closed the gate F will be swung to the position shown at the top of figure 1, so as to lie close to the railing *b*, and not interfere with the movement of the cars in passing around curves. As soon, however, as the train arrives at a station and the gates D are opened the gate F will be swung to the position shown at the bottom of said figure, so as to close the space E and prevent persons from being crowded therein.

104 It is not necessary, as will readily be seen, that the gates F should be secured to the gates D by means of the arms *m*, as they may be secured to or made to operate in connection with said gates in any convenient or desirable manner.

What I claim is—

Erase and insert "A."

1. The combination, with the platform of a car and a gate for closing the side entrance thereto, of means for opening and closing said gate, the operating handle of which is arranged at or near the inner end of the platform guard rail, whereby the attendant may open or close the gate while standing at the end of said guard rail, and without obstructing the ingress and egress of passengers over the platform, all substantially as described.

2. The combination, with the platforms of two adjoining cars and the gates for closing the side entrances thereto, of means for opening and closing said gates, the operating handles of which are arranged at or near the inner ends of the platform guard railings, whereby the attendant may open or close both gates while standing at the ends of said railings, and without obstructing the ingress or egress of persons over the platform, all substantially as described.

---

3. The combination, with a railway car and its platform having an end guard rail by which side entrance thereto is provided, of a gate for closing said entrance, a rod, as *f*, sliding in or on guides secured to said guard rail, and a link, as *e*, connected to said gate and rod, all substantially as described.

4. The combination, with a railway car and its platform having an end guard rail by which a side entrance thereto is provided, of a swinging gate for closing said entrance, a rod, as *f*, sliding in or on a guide secured to said rail, a link, as *e*, connected to said gate and rod, and means for locking said gate in its closed position opened and and closed positions, all substantially as described.

Per A.

Erase and insert "A."

105 5. The combination, with two railway cars and their adjoining platforms having end guard railings by which side entrances thereto are provided, of swinging gates for closing said entrances, two rods, as *f*, sliding in or on guides secured to said guard railings, and links, as *e*, connected to said gates and rods, substantially as described.

6. The combination, with the platforms of two adjoining cars, of swinging gates, as D, for closing the side entrances thereto, one of said gates being provided with a gate, as F, for closing the space between the platforms, and means for opening and closing said gates, the operating handles of which are arranged at or near the inner ends of the platform guard railings, all substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WM. W. ROSENFIELD.

JAS. A. HOVEY.
T. H. PALMER.

Oath.

STATE OF NEW YORK,
County of New York, } *ss:*

William W. Rosenfield, the above-named petitioner, being duly sworn, deposes and says that he verily believes himself to be the original, first, and sole inventor of the improvements in gates for railway cars described and claimed in the foregoing specification; that he does not know and does not believe that the same was ever before known or used; that the same has not been patented to him nor with his knowledge or consent in any country; that the same has not been introduced into public use or on sale in the United
States for more than two years prior to the date hereof, and
106 that he is a citizen of the United States, residing at New
York, in the county of New York and State of New York.

WM. W. ROSENFIELD.

Subscribed and sworn to before me this 29th day of March, 1883.

{Thomson H. Palmer, Notary Public, Kings County, New York.
Cert. filed in N. Y. Co.}

THOMSON H. PALMER.
Notary Public, Kings Co., N. Y.

Cert. filed in N. Y. Co.

(Endorsed:) 90430. Application of —— —— for ——. Patent Office, U. S. A., Apr. 3, 1883.

Room No. 87.
A. W.
4, 12, '83.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., *April 12th*, 1883.

Wm. W. Rosenfield, care Munson & Philipp, box 1648, New York city.

Car gates. Filed April 3, 1883.

References are given in the patents of Moore & Thompson, Dec. 12th, 1876, No. 185,344, and A. V. Briesen, Dec. 12th, 1882, No. 268,859 (car platforms). The 5th claim is a duplication of the 3d, and the 1st and 2d are functional. Therefore, in view of the references and reasons above named, the 1st, 2d, 5th, and 6th claims are rejected.

SANDERS, *Ex'r.*
CHANDLER, *Ass't Ex'r.*

(Endorsed:) 1. 90430. Off. letter, Apr. 12, '83.

107 Room 87.

In re Application of WM. W. ROSENFIELD, No. 90430, Gates for R. R. Cars. Filed April 5, 1883.

Please amend as follows:
Erase claims 1 and 2 and insert:

"1. The combination, with a gate arranged to close the side entrance to a car platform, of an operating handle located at or near the inner end of the platform guard rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard rail, substantially as described.

“A.”

"2. The combination, with gates arranged to close the side entrances to the adjoining platforms of two adjoining cars, of operating handles located at or near the inner ends of the platform guard rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard rails, substantially as described."

In claim 4, lines 6 and 7, erase "opened and closed positions," and insert closed position.

108 Erase claims 5 and 6 and insert—

"5. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of rods, as *f*, sliding in or on guides secured to the guard rails of said platforms, and links, as *e*, connected to said gates and rods, substantially as described.

“A.”

"6. The combination, with gates, as D, arranged to close the side entrances to the adjoining platforms of two cars, and a gate, as F, arranged to close the space between said platforms, of operating handles located at or near the inner ends of the platform guard rails, and means connecting said gates and handles, whereby the attendant may open and close said gates simultaneously while standing at the end of said rails, substantially as described."

On page 4 of the specification, line 13, after "the," insert the word "adjoining," and in line 14 erase "adjoining."

Respectfully, MUNSON & PHILIPP, *Att'ys.*

Hon. Com. of Patents, Wash., D. C.

April 19, 1883.

(Endorsed:) 2. 90430. 87. "A." Apr. 20, '83. Patent Office, Apr. 20, 1883, U. S.

109 (2-024.)

Issue division. All communications should be addressed to "the Commissioner of Patents, Washington, D. C."

Serial No. 90430.

DEPARTMENT OF THE INTERIOR, U. S. PATENT OFFICE,
WASHINGTON, D. C., *May* 1, 1883.

William W. Rosenfield, care of Munson & Philipp, box 1648, N. Y. city.

SIR: Your application for a patent for an improvement in railway-car gates, filed Ap'l 3, 1883, has been examined and allowed.

The final fee, twenty dollars, must be paid, and the letters patent bear date as of a day not later than six months from the time of this present notice of allowance.

If the final fee is not paid within that period the patent will be withheld, and your only relief will be by a renewal of the application, with additional fees, under the provisions of section 4897, Revised Statutes. The office aims to deliver patents upon the day of their date and on which their term begins to run; but to do this properly applicants will be expected to pay their final fees at least twenty days prior to the conclusion of the six months allowed them by law. The printing, photo-lithographing, and engrossing of the several patent parts, preparatory to final signing and sealing, will consume the intervening time, and such work will not be done until after payment of the necessary fees.

When you send the final fee you will also send, distinctly and plainly written, the name of the inventor and title of invention, as above given, date of allowance (which is the date of this circular), date of filing, and, if assigned, the names of the assignees.

110 If you desire to have the patent issue to assignees, an assignment containing a request to that effect, together with the fee for recording the same, must be filed in this office on or before the date of payment of final fee.

Additional copies of specifications and drawings will be charged for at the following rates: Single copies, uncertified, 25 cents; twenty copies or more, 10 cents each. The money should accompany the order.

Very respectfully, BENJ. BUTTERWORTH,
Commissioner of Patents.

[On margin:] The within title is that given by the examiner in charge as most appropriate to your invention. Should you desire a change in the same, satisfactory reasons must be given therefor on or before the payment of the final fee.

[Printed diagonally across the face:] ☞ In remitting the final fee give the serial number at the head of this notice.

Memorandum.

Final fee paid at U. S. Patent Office, $20. M.
New York, Oct. 23, 1883.
In the application of William W. Rosenfield.
(Serial No. 90430.)
Filed April 5, 1883.
Allowed May 1, 1883.
For improvement in railway-car gates.
We herewith send our check for $20.00 in payment of final fee.

Please issue the patent to Joseph Aron, as per assignment sent herewith, and send the same to Munson & Philipp, P. O. box 1648, New York, N. Y.

(Endorsed :) U. S. Patent Office, Oct. 24, 1883.

111 By mail.

Serial No. 90430. Patent No. 288,494. Ex'r Book No. 49. Sanders.
1883.

William W. Rosenfield, of New York, ass'or to Joseph Aron, of same place.

County of New York,
State of "

Parts of application filed.

Invention, railway-car gates.
Petition, April 3, 1883.
Affidavit, " "
Specification, April 3, 1883.
Drawing, " "
Model, not required.
Specimen, —.
First fee, cash, $15, April 3, 1883.
" cert.
App. filed complete Ap'l 3, 1883.

Examined Apr. 27, '83. Sanders.
Countersigned, J. W. Babson.
Apr. 30, '83; Oct. 20, '83, for Commissioner.
2. Notice of allowance, May 1, 1883.
Final fee, cash, $20, Oct. 24, 1883.
3. " cert., —— —, 188–.
Patented Nov. 13, 1883.
Att'y or P. O. address, Munson & Philipp, box 1648, New York city.

112 1883.

Contents.

Application papers.
1. Rej. Apr. 12, 1883.

2. "A," Apr. 20, 1883.
3.
4.
5.
6.
7.
8.
9. Oath, 29 March.
10.
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12.
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19.
20.

Ex'd: M. McK., J. A. W.

Title: Improvement in railway-car gates. 105. Railway cars. Platforms.

Endorsed: 15-848. D., '84.

(Here follow diagrams marked pages 113-'14.)

115 "COMPLAINANT'S EXHIBIT PEEPLES FILE WRAPPER AND CONTENTS." J. A. R., Examiner.

U. S. Circuit Court, Southern District of New York. July 28, 1885.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY CO.

(2-175.)

DEPARTMENT OF THE INTERIOR.

(Cut.)

UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the files of this office of the file wrapper and contents in the matter of the application filed May 21, 1884, by Thomas W. Peeples, serial No. 132,257, for improvement in gates for railway cars.

In testimony whereof I, M. V. Montgomery, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this 17th day of April, in the year of our Lord one thousand eight hundred

~~(No Model.)~~

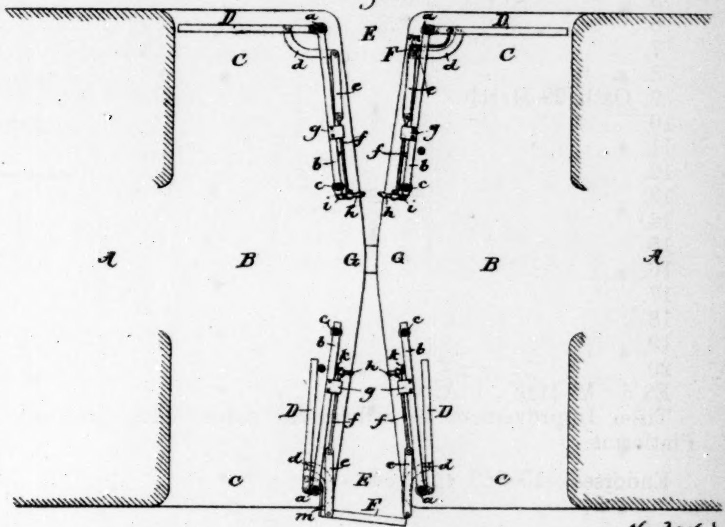
W. W. ROSENFIELD.

113

RAILWAY CAR GATE.

~~No. 288,404.~~ ~~Patented Nov. 13, 1883.~~

Fig. 1.



No. 304
Arow
v
M. Ry. Co.
p. 113.

Fig. 3.

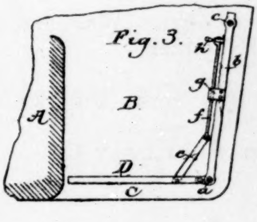
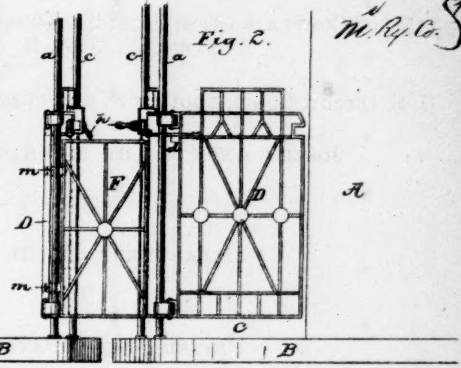


Fig. 2.



Witnesses:

A. N. Jasbera
J. A. Hovey

Inventor:

Wm. W. Rosenfield,
by his Attorneys
Munson & Philipp

No. 304
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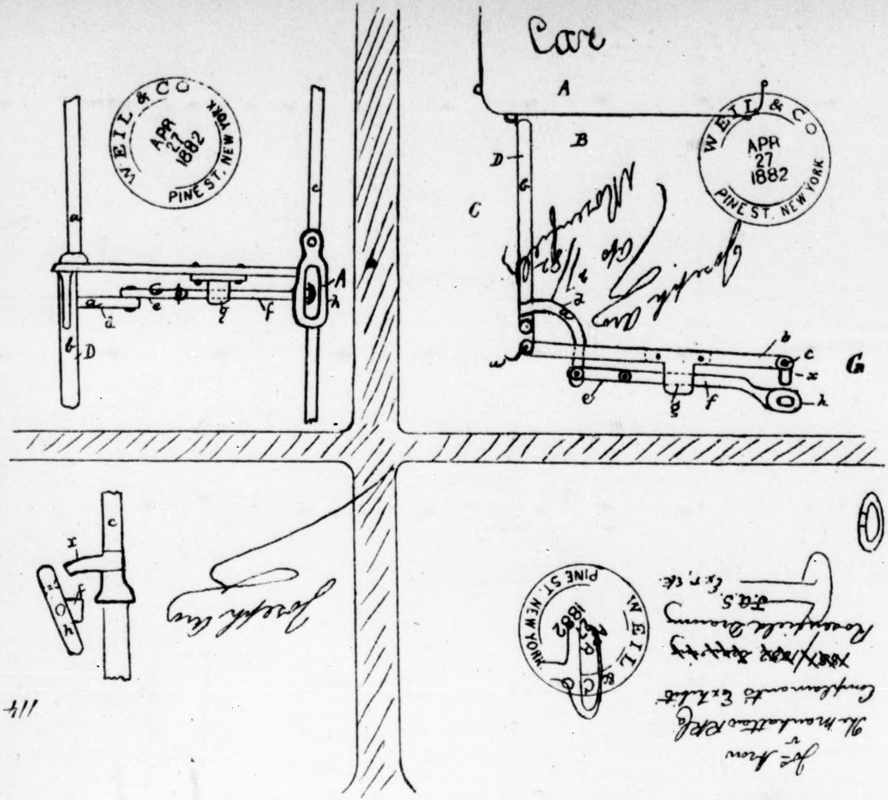
v
M. Ry. Co.
Ex. 114



WEIL & CO
APR 27 1882
PINE ST. NEW YORK

Jos. Arow
v
The Manhattan R.R. Co.
Complainant's Exhibit
~~XXX~~ ~~XXX~~
Rosenfield Drawing
J.A.S.
Ex'r, &c.

WEIL & CO
APR 27 1882
PINE ST. NEW YORK

114

and eighty-five, and of the Independence of the United States the one hundred and ninth.

[SEAL.] M. V. MONTGOMERY,
Commissioner.

116 $15.

NEW YORK, *May* 19, 1884.

Hon. Commissioner of Patents, Washington, D. C.

SIR: I send herewith complete appl'n for patent for imp't in gates for railway cars by T. W. Peeples, viz:

1 petition & power of att'y.
1 specification.
1 oath.
1 drawing.
1 check for $15.

The claims will be found to interfere with those of patent No. 288,494, Nov. 13, 1883, to W. W. Rosenfield, & I desire that an interference be declared between the latter & my client.

Very resp'y, A. H. GENTNER.

(Endorsed:) U. S. Patent Off., May 21, 1884.

To the Commissioner of Patents:

Your petitioner, Thomas W. Peeples, a citizen of the United States residing in the city, county, and State of New York, prays that letters' patent may be granted to him for the improvement in "gates for railway cars" set forth in the annexed specification, and he thereby appoints A. H. Gentner, of No. 206 Broadway, in the city of New York and State of New York, his attorney, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

THOS. W. PEEPLES.

117 To all whom it may concern:

Be it known that I, Thomas W. Peeples, a citizen of the United States and a resident of the city, county, and State of New York, have invented certain "new and useful improvements in gates for railway cars," fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In many classes of railway cars, and particularly in those used upon the elevated and other city railroads, it has been found necessary, in order to prevent passengers from falling from the train, and also to prevent persons from attempting to get off or on a car while in motion, to provide the entrances to the car platforms with gates by which they can be closed except at the proper times. These gates are usually in charge of a guard or attendant, whose duty it is to close the gates before the train commences to move and to open them only after the train has come to a full stop. As there is usually but one guard or attendant stationed between each two adjoining cars it follows that to open or close both gates he must pass around from one to the other of the adjoining platforms. This passing from one platform to the other, besides being a source of annoyance to the guard, occasions some delay, which is very annoying to the passengers, particularly when a large number are required to get off or on a car in a very short time.

It is the object of the present invention to provide means by which the guard or attendant can, without changing his position, open or close both gates simultaneously and with the least possible delay.

To that end the invention consists in providing the gates with connections so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passage-way leading from one of the cars to the other.

In the accompanying drawings figure 1 is a plan view of the adjoining platforms of two cars, showing the gates upon one side open
and those upon the opposite side closed, the gates being pro-
118 vided with an opening and closing apparatus embodying the
present invention.

Figure 2 is an elevation looking toward the guard rails and showing the car platform in section.

Referring to said drawings, it is to be understood that A A represent two ordinary railway cars, and B B the adjoining platforms thereof, C C being the usual entrances from the station platform, and D D gates of the ordinary construction for closing said entrances. The gates D are hinged in the usual manner to posts *a*, rising from the corners of the platforms, and close against suitable stops projecting from the car body. The platforms B are provided, as shown, with the usual guard railings, *b*, extending inward from the posts *a* to similar posts, *c*, which are located a sufficient distance apart to leave a passage-way, G, from one car to the other. When the gates are thus arranged it is necessary, as will readily be seen, in order to close or open both gates, for the guard to pass from one platform around the posts *c* to the opposite platform, thus causing some delay in opening or closing one of the gates and adding to the labor of the guard and causing annoyance to the passengers. In order to avoid this each of the gates is provided, at a suitable distance from its hinge, with a link, *d*, which is hinged to the gate at d^1, while its other end is connected to a sliding piece, *e*. This piece *e* slides upon the guide or rail e^1, which latter is fastened in a substantially horizontal position to the guard rail *b*, as shown. To the piece *e* is also pivoted a link, *f*, the opposite end of which is connected with the arm *g* of a bell-crank lever, G, turning on a pivot set in the guide e^1 near the inner end of the railing *b*. The other arm, g^1, of the bell-crank lever G is provided with a handle, *h*, by which it can be operated. From this arrangement it will be seen that the guard or attendant, while standing in the passage-way G, can, by grasping the two handles *h* and turning the levers G in one direction or the other, open or close both gates simultaneously and without loss of time. The
mechanism will preferably be provided with some form of
119 locking means by which the gates can be reliably held in

their closed position. Such locking may be accomplished by having a fixed stop, *i*, set in the guide e^1 or in the fixed guard railing *b* in such position that when the lever G is thrown fully over to close the gate the arm *g* will be arrested by said stop *i* in such position that the pivot g^2 will be slightly beyond the dead point or below the line connecting the pivots g^3 e^2, so that a pressure brought upon the gate tending to open the same will be transmitted through the parts *d e f* to the point *i*, which, not being able to yield, will effectually resist the undue opening force.

Although it is preferable that the links *d f* should be arranged upon the inside of the railings *b*, as shown in the figures, yet this arrangement is not necessary. The rods and links may be arranged upon the outside of the railings, care being taken in this case to so arrange the parts that the inner portions of the railings *b* do not interfere with the proper working of the mechanism.

What I claim is—

First. The combination, with a gate arranged to close the side entrance to a car platform, of an operating handle located at or near the inner end of the platform guard rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard rail, substantially as described.

Second. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of operating handles located at or near the inner ends of the platform guard rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard rails, substantially as described.

Third. The combination, with a railroad car and its platform having an end guard rail by which a side entrance thereto is provided, of a gate for closing said entrance, a link, as *d*, con-
120 nected to said gate, and a rod or link, as *f*, and a sliding
piece, as *e*, connecting the parts *d f*, all substantially as described.

Fourth. The combination, with a railway car and its platform having an end guard rail by which a side entrance thereto is provided, of a swinging gate for closing said entrance, links *d f*, connected by a sliding piece, *e*, and lever G, all arranged to operate substantially as described.

Fifth. The stop *i*, in combination with the lever G, links *f d*, connecting piece *e*, and gate D, all arranged to operate substantially as described.

Sixth. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of links *d f*, connecting slides *e*, and levers G, substantially as described.

THOS. W. PEEPLES.

Witnesses:

A. J. LEHMAN.
BERN. T. VETTERLEIN.

City, County, and State of New York, *ss:*

Thomas W. Peeples, the above-named petitioner, a citizen of the United States and a resident of the city, county, and State of New York, being duly sworn, deposes and says that he verily believes himself to be the original, first, and sole inventor of the improvement in gates for railway cars described and claimed in the foregoing specification; that the same has not been patented to himself or to others with his knowledge or consent in any foreign country; that the same has not to his knowledge been in public use or on sale in the United States for more than two years prior to this application, and he does not know and does not believe that the same was ever known or used prior to his invention thereof.

THOS. W. PEEPLES.

Sworn to — subscribed before me this 18th day of April, 1884.

[L. S.] WINTHROP PARKER,
Notary Public (No. 59), City and County of New York.

121 (Endorsed:) Serial No. 132,257. ½. Application. May 21, '84. U. S. Pat. Off., May 21, 1884.

A. W. 6 16 84

Department of the Interior,
United States Patent Office,
Washington, D. C., *June 16th*, 1884.

Thomas W. Peeples, care A. H. Gentner, 206 Broadway, N. Y. city.

Car gates. Filed May 21st, 1884.

The patent of Rosenfield, Nov. 13th, 1883, No. 288,494 (platforms), substantially answers the claims. The application is therefore rejected. Should applicant desire an interference with the above-named patent it will be necessary for him to file an affidavit as to date of invention, in accordance with the requirements of section 2, rule 93, Rules of Practice.

SANDERS, *Ex'r.*
CHANDLER, *Ass't Ex'r.*

(Endorsed:) 132,257. 1. Rej. June 16, '84.

New York, *June* 28, '84.

Hon. Commissioner of Patents, Washington.

Sir: Enclosed please find affidavit by Mr. T. W. Peeples, 122 which, I trust, will put his application for car gates in condition for declaration of interference with the Rosenfield patent cited in last office letter.

Very resp'y, A. H. GENTNER.

(Endorsed:) U. S. A. Pat. Off., June 29, 1884.

In the matter of the application for patent for "car gates" by Thomas W. Peeples, filed May 21, 1884, No. 132,257, room 87.

Before the Hon. Commissioner of Patents.

STATE OF NEW YORK,
City and County of New York, } *ss:*

Thomas W. Peeples, of the city, county, and State of New York, being duly sworn, deposes and says that he is the person who has executed the application for patent for "car gates" filed in the U. S. Patent Office on or about May 21, 1884, serial No. 132,257, and that he made the invention specified in the claims of said application before the third day of April, 1883.

THOS. W. PEEPLES.

Subscribed and sworn — before me this 21st day of June, 1884.
[L. S.] H. W. SCHEIDEMANTLE,
Notary Public, Kings and N. Y. Co's, N. Y.

(Endorsed:) 132,257. 2. Affidavit. June 29, '84. U. S. A. Pat Off., June 29, 1884.

123 Room No. 87. (Interference.)

A. W. 8 27 84

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., *Aug. 27th,* 1884.

Thomas W. Peeples, care A. H. Gentner, 206 Broadway, N. Y. city:

Please find below a copy of a communication from the examiner concerning your application for pat. for imp't in "gates for railway cars," filed May 21, 1884, No. 132,257.

Very respectfully, BENJ. BUTTERWORTH,
Commissioner of Patents.

ROOM No. —.

Your case, above referred to, is adjudged to interfere with others, hereafter specified, and the question of priority will be determined in conformity with the rules.

The statement demanded by rule 105 must be sealed up and filed on or before the 25th day of Sept., 1884, with the subject of the invention and name of party filing it endorsed on the envelope. The subject-matter involved in the interference is:

1st. The combination, with a gate arranged to close the side entrance to a car platform, of an operating handle located at or near the inner end of the platform guard rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard rail.

2d. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of operating handles located at or near the inner ends of the platform guard rails, and means connecting said gates and handles, whereby the 124 attendant may open or close both gates simultaneously while standing at the ends of said guard rails.

Being claims 1 and 2 of the patent and application, respectively.

The other party to the interference is:

William W. Rosenfield, New York city, application filed Apr. 3, 1883, No. 90430, patent granted Nov. 13, 1883, No. 288,494, for "railway-car gates."

Munson and Philipp, box 1648, N. Y. city, attorneys of record.

H. P. SANDERS, *Ex'r.*

(Endorsed:) Serial No. 132,257. Paper No. 3. Dated Aug. 27, 1884. Pre. int'f'r.

New York, *Nov.* 20, 1884.

In re interference Peeples *vs.* Rosenfield.

Before the honorable Commissioner of Patents.

Gates for railway cars.

Please consider Livingston Gifford and Edwin H. Brown, constituting the firm of Gifford & Brown, of 32 Park Place, New York, N. Y., as my substitutes in the above case.

A. H. GENTNER.

I hereby consent to the substitution of Livingston Gifford and Edwin H. Brown, composing the firm of Gifford & Brown, 125 as my attorneys in the matter of my application for patent involved in the above-entitled interference, and I hereby appoint said Gifford & Brown my attorneys, with full power of substitution and revocation, to prosecute my said application, to make amendments and alterations therein, to sign the drawings, and to transact all business in the Patent Office connected therewith.

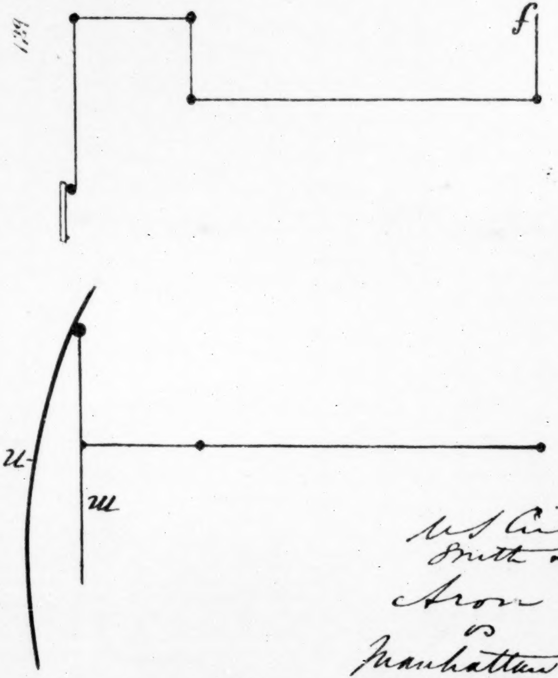
THOMAS W. PEEPLES.

(Endorsed:) Serial No. 132,257. Paper No. 4. Power of att'y. Filed Nov. 26th, 1884. U. S. Pat. Off., Nov. 26, 1884.

Serial No. 132,257. Ex'r Book No. 45.
Interference asked. Sanders.

1884.

Patent No. —.
Thomas W. Peeples,
Of New York,
County "
State of "



No. 304
Aron
v
M. Ry Co.
} p. 129

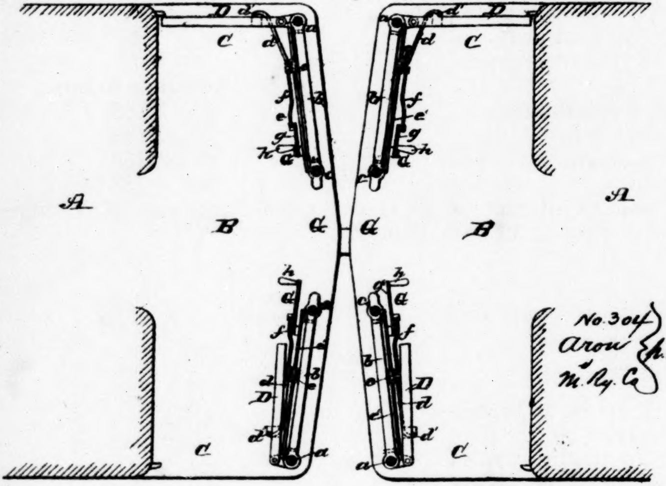
U.S. Circuit Court
South Dist of N.Y.
Aron
vs
Manhattan Ry Co.
} In Equity
Compl'ts Exhibit
"Brevoort Sketch"
W.S. Exr

T. W. Peeples.

Railway Car Gates.

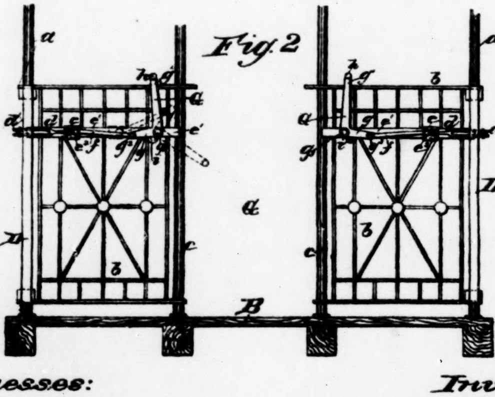
Filed May 21, 1884.

Fig. 1



No. 304
Arou vs M. Ry. Co } p. 128

Fig. 2



Witnesses:
Bern. T. Vetterlein
A. J. Lehman

Inventor:
T. W. Peeples
by his Atty.

Parts of application filed.

Invention: Gates for railway cars.
Petition, May 21, 1884.
Affidavit, " "
Specification, May 21, 1884.
Drawing, " "
Model, —.
Specimen, —.
1. First fee, cash, $15, May 21, 1884.
" cert., —.
App. filed complete May 21, '84.
126 1. Examined.
3. Countersigned.

For Commissioner.
Notice of allowance, 188
Final fee, cash, 188
" cert., 188
Patented, 188
Att'y or P. O. address: A. H. Geutner, 206 Broadway, N. Y. city.
Gifford & Brown, 32 Park Place, N. Y. city.

1884.

Contents.

½. Application 1, paper —.
1. Rej. June 16, 1884.
2. Affidavit, June 29, '84.
3. Pre. intf., Aug. 27, '84.
4. Power of att'y, Nov. 26, '84.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14. 105. Railway cars.
15. Platforms.
16.
17.
18.
19.
20.
127 Title: Improvement in —.
Ex'd: J. A. M., M. McK.

(Endorsed:) 7296. D., '85.

(Here follow diagrams marked pages 128–129.)

129*a* United States Circuit Court for the Southern District of New York.

JOSEPH ARON *ag'st* THE MANHATTAN RAILWAY COMPANY.

We hereby consent that Messrs. Davies — Rapallo be substituted in our place and stead as solicitors for the defendant in the above-entitled action.

Dated New York, December 19th, 1884.

DEYS & DUER & BAUERDORF,
Def't's Attorneys.

130 [Endorsed:] U. S. circuit court, southern dist. of N. Y. Joseph Aron against The Manhattan Railway Company. Consent for substitution. Davies and Rapallo, solicitors for def't, Mutual Life building, 32 Nassau —, New York city. U. S. circuit court. Filed January 2nd, 1885. Timothy Griffith, clerk.

131 U. S. Circuit Court, Southern District of New York. In Equity.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY CO.

Testimony taken pursuant to the annexed notice, under the 67th rule of the Supreme Court, in equity, as amended, before John A. Shields, a standing examiner, on the 5th day of November, 1884, at 32 Park Place, at the office of Edwin H. Brown.

Present: Messrs. Munson & Philipp, solicitors for complainant; Edwin H. Brown, Esq., defendant's counsel.

HENRY L. BREVOORT, a witness examined on behalf of the defendant, being duly sworn, deposes and says as follows:

1 Q. What is your name, age, residence, and occupation?

A. Henry L. Brevoort; 35 years; I reside in the city of Brooklyn, and am by occupation an engineer.

132 2 Q. Please state what experience you have had in the practice of your profession, and also state whether or not you have ever been called upon to testify as an expert witness in suits relating to patents.

A. At the age of 18, when I entered a machine shop, I became practically conversant with mechanical details and workshop practice; since that time I have been exclusively engaged in mechanical occupations, such as designing and testing machinery, and the like. For the last ten years I have been very frequently called upon to testify as an expert witness in suits relating to patents and patented inventions. I have been so called in many hundreds of cases. I am very familiar with railroad work, having had much practical experience in the construction and the operation of railroad machinery.

3 Q. Please look at the model which I now show you and state if you know what it illustrates.

A. I have carefully examined the model referred to in the question. This model represents the front door of a cab of a locomotive through which the fireman passes to the run board to oil the machinery at the forward part of the engine. The opening and shutting mechanism shown at the top of the model is used to move the door, hold it open or shut, and also to hold it in any desired position for this door; also serves the functions of a window, and has always a glass, and at times it is desirable to set it at some particular angle. The opening and shutting device consists of a slide and a cross-head upon the side of the cab and a link connecting this cross-head with the door or window to which the link is suitably pivoted. The cross-head carries a screw by means of which the door can be worked, the screw serving as a handle, and also by means of which the door can be fastened in any convenient position. I have been acquainted with such devices as early as 1870, when I had seen them in use on locomotives in this country.

133 (Counsel for defendant offers the model referred to by witness in evidence, and the same is marked "Def't's Exhibit Locomotive Cab Model," J. A. S., ex., &c.)

(Counsel for complainant objects to the introduction in evidence of the model referred to, because the answer of the defendant does not state the names or residences of any person or persons who is or are alleged to have invented or had prior knowledge of the device shown in the model, or where or by whom said device has ever been used, as required by law.)

4 Q. Look at the model I now show you and state, if you know, what that illustrates.

A. I have examined the model referred to in the question. It illustrates a portion of the platform of a car with the gate and railing and gate-opening device as used on some of the cars of the elevated railroad company in the city of New York.

(Counsel for defendant offers the model referred to by witness in evidence, and the same is marked "Defendant's Exhibit Model of Defendant's Car," J. A. S., ex., &c.)

5 Q. Have you had knowledge of gates used otherwise than is illustrated by Defendant's Exhibit Model of Defendant's Car upon the cars of the defendant company?

A. I have.

6 Q. From what time to what time?

A. From, I should think, 1878, up to the present time. The company has used gates, and do use a very large number of gates, without any opening or closing mechanism as illustrated in the model last referred to. Some of such gates are hinged to the railing stanchion as shown in the exhibit. Some are hinged to the car body and fold back against the same, when the passage-way is to be opened.

134 7 Q. Please state the manner of operating the gates which

had not combined with them mechanism such as is illustrated in Defendant's Exhibit Model of Defendant's Car.

A. In the case of the gates that were hinged as in the model to the railing stanchion the brakeman or other attendant who attends to the gates has to step upon one of the platforms of one of the cars and reach almost to the car body to undo the latch. He then has to step upon the other platform of the adjoining car and do the same thing. After freeing both of the latches he usually stands between the cars, grasps both gates near the hinged portion and pulls them open simultaneously. In the case of the cars having the gates hinged to the car body the brakeman stands between the cars and can reach the latches of both gates, which latches are near the railing stanchion, and in this way while standing between the cars he can swing open both gates. Of course, he has to lean a little towards each gate to enable him to reach the latches, but he is not required to change his position materially to get both gates open. These methods which I have described have both been practiced since the gates were used, and are practiced to-day upon all the cars which are not provided with gate-openers.

Counsel for defendant offers in evidence a certified copy of U. S. letters patent No. 32512, granted June 11th, 1861, to Darwin De Forrest Douglas, for improvement in window-blind, and the same is marked "Defendant's Exhibit Douglas Patent," J. A. Shield's, ex'r, &c.

Counsel for defendant also offers in evidence a certified copy of U. S. letters patent No. 32681, granted July 2d, 1861, to Thomas Castor, for improvement in opening railroad-car doors, and the same is marked "Defendant's Exhibit Castor Patent," J. A. S., ex'r, &c.

135 Also a certified copy of U. S. letters patent No. 41676, granted February 23d, 1864, to William H. Brown, for improvement in opening and closing iron blinds or shutters, and the same is marked "Defendant's Exhibit Brown Patent," J. A. S., ex'r, &c.

Also certified copy of U. S. letters patent No. 91026, granted June 8, 1869, to Daniel Kidder, for improvement in shutter-worker, and the same is marked "Defendant's Exhibit Kidder Patent," J. A. S., ex'r, &c.,

Also certified copy of U. S. letters patent No. 93322, granted August 3, 1869, for improvement in street cars, to Madison & McLaughlin; the same is marked "Defendant's Exhibit Madison & McLaughlin Patent," J. A. S., ex'r, &c.

Also certified copy of English letters patent No. 1602, granted May 27th, 1872, to Samuel Smith, for improvement in the mode of opening and shutting doors of vehicles, &c., and the same is marked "Defendant's Exhibit Smith Patent," J. A. S., ex'r, &c.

Also a certified copy of U. S. letters patent No. 136,801, granted March 11, 1873, to John F. Wollensak, for improvement in transom lifters and locks, and the same is marked "Def't's Exhibit Wollensak Patent," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 138,879, granted

May 13, 1873, to Augustus H. Gibbs, for improvement in shutter-workers, and the same is marked "Def't's Exhibit Gibbs Patent," J. A. S., ex., &c.

136 Also a certified copy of English letters patent No. 653, granted February 21, 1873, to Thomas Poolly Cooper, for improved means and mode for closing and fastening railway carriage doors, and the same is marked "Def't's Exhibit Cooper Patent," J. A. S., ex., &c.

Also a certified copy U.S. letters patent No. 147,190, granted February 3, 1874, to John Stephenson, for improvement in devices for operating street-car doors, and the same is marked "Stephenson Patent No. 1," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 155,118, granted Sept. 15, 1874, to John Stephenson, for improvement in devices for operating street-car doors, and the same is marked "Def't's Exhibit Stephenson Patent No. 2," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 157,368, granted Dec. 1st, 1874, to George M. Brill, for improvement in operating car doors, and the same is marked "Def't's Exhibit Brill Patent," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 162,964, granted May 4, 1875, to John Stephenson, for improvement in street cars, and the same is marked "Def't's Exhibit Stephenson Patent No. 3," J. A. S. ex., &c.

Also a certified copy of U. S. letters patent No. 185,344, granted December 12, 1876, to John A. Moore and Thomas M. Thompson, for improvement in gates for railway passenger cars, and the same is marked "Def't's Exhibit Moore and Thompson Patent," J. A. S., ex., &c.

137 Also a certified copy of English letters patent No. 1072, granted March 16, 1877, to Alexander Melville Clark, for improvement in tramway cars, and the same is marked "Def't's Exhibit Clark Patent," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 202,413, granted April 16, 1878, to Thomas Corrigan, for improvement in shutter-workers, and the same is marked "Def't's Exhibit Corrigan Patent," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 212,012, granted February 4, 1879, to John Kelso and William H. Ludewigs, for improvement in shutter-workers, and the same is marked "Def't's Exhibit Kelso and Ludewigs Patent," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 219,852, granted September 23d, 1879, to Oliver Furguson, for improvement in gates, and the same is marked "Def't's Exhibit Furguson Patent," J. A. S., ex., &c.

Also a certified copy of U. S. letters patent No. 235,311, granted December 7, 1880, to John Stephenson, for improvement in tram car, and the same is marked "Def't's Exhibit Stephenson Patent No. 4," J. A. S., ex., &c.

Counsel for compl't object to the introduction in evidence of all of the foregoing patents, except those referred to in the answer of the def't, upon the ground that the names of the patentees, the dates of their patents, and when granted is not set up in said answer, as required by law in such case.

Adjourned until Nov. 19, 1884, at 11 a. m.

138 New York, *November 19th*, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

Counsel for defendant agrees that counsel for complainant may reserve all objections which they may desire to make to the testimony of Mr. Brevoort until the close of Mr. Brevoort's direct examination.

8 Q. Please explain the state of the art relative to mechanism for opening and closing gates, doors, and similar devices as it existed prior to the date of complainant's patent sued on. In answering you may refer to any of the exhibits in this case.

A. Referring to the patent set up in this case and to the use by the elevated railroad company of car gates before the date of the Rosenfield invention, I will first speak of the various cases in which gates have been used for protecting the side entrance to a car platform. First in this order I will mention the gates used by the elevated railroad company. One form of these gates was identical with the gate shown in Defendant's Exhibit Model of Defendant's Car. Another form was hinged to the body of the car, and when opened lay against the transverse wall of the car. These two forms of gates are identical with two of the forms described as equivalents in the Rosenfield patent. Neither of these old forms was provided with gate openers or closers, but one of the forms was conveniently operated by the attendant when standing in the passageway between the two cars.

In the Madison & McLoughlin patent, No. 93322, of 1869, a gate is shown for opening and closing the side entrance of a street-car platform. This gate, when opened, lay against the transverse portion of the car body, and when closed was practically at right angles therewith, closing the passage-way to the platform. In the
139 Stephenson patent a like arrangement is shown for closing the platform entrance of a car, the gate being so arranged that when the entrance to the platform is open the gate swings in front of the rail of the car or platform. This patent is patent No. 235,311, of 1880. Neither of the patents I have just referred to or the previous one described any gate-opening mechanism.

The patent of Moore and Thompson, No. 185,344, of 1876, described a seat for a railway passenger car intended to be used on roads operated by steam, which gate consists of slats pivoted one to the other, and capable of folding when the passage-way to the platform is to be opened and unfolding when it is to be closed. This gate, unlike those previously described, is operated by a system of levers, so that the guard can stand upon the platform near the car door and, by operating the lever adjacent to his hand, open or close the gate, thus permitting access to the platform to be had or cutting off and closing the passage-way when desired. The preferred location for the operator in this case was at the car door; but, by a slight modification in the mechanism, this position could have been transferred so that the guard would have stood between the passageway of the two cars.

The next lot of patents to which I shall refer all describe methods of opening the door which controls the access to or from the platform to the inside of the car, or *vice versa*, the requirements for such control being substantinily the same requirements as are requisite in the case of a platform gate, the two devices, a platform gate and a car door, being substantially the same thing, the only difference being one of location. In the case of the doors the preferred position of the operator is upon the front platform of the car, and it is the object of the door opening and closing devices described in the patents to which I am about to refer to give to the person on the front platform control over that which closes or opens the way for passengers, this being the preferred location for the operator,
140 though the same mechanism, if altered slightly, would have suited other positions equally as well. I will first refer to the Stephenson patent, No. 162,964, of 1875. This patent shows a shaft and handle with gearing, so that by rotating the handle upon the front rail of the car the rear door was opened or shut, as the case might be. The Stephenson patent, No. 115,118, shows five methods of opening doors from the front platform, the doors being located at the rear of the car. In the method shown in Figs. 1 and 2 a crank handle placed on the dash-board rail is made to connect by means of a crank, a connecting rod, a bell-crank lever, and a link with the sliding door. In the second case, Figs. 3 and 4, a handle arranged in like manner, with slightly different connecting mechanism, operates a door moving in a semicircle.

In Fig. 5 a like arrangement of handle, with two cranks, two cords, and a pulley, operates a sliding semicircular door.

Fig. 6 shows a like door, utilizing two cords, but with a different arrangement of levers.

Fig. 9 shows another method where direct metallic connections are used, the door in this case sliding on a curve, but not a semicircle. The Stephenson patent, No. 147,190, of 1874, shows how a cord may be arranged by which the door may be operated, which cord connects with the door.

The English patent to Clarke of the year 1877, No. 1072, is for some of the inventions of Stephenson, and shows some of the methods to which I have referred, and also the additional method where a lever convenient to the driver's hand operates a rock shaft having a lever upon it at the rear end, which lever connects with a slot in the door. The same patent also shows a method of opening the rear door by means of a tooth segment connecting with a rack upon the door.

The patent of Castor, No. 32681, of the year 1861, shows a method of opening the rear door by means of a lever located on the
141 front platform and suitable connecting devices under the car between it and the rear sliding door.

The patent of Brill, No. 157,368, of 1874, shows a method whereby the driver, either by his hand or his foot, can operate the rear door by rotating a shaft under the car and thus by suitable gearing and levers open or close the rear door. The patent of S. H. Little, No. 140,052, of 1873, shows a method of opening a street-car door by means of a cord operated by a pulley, around which the cord is wrapped, and which pulley is operated by the driver being provided with a crank for that purpose. The patent of D. R. Hart, dated May 25th, 1875, No. 163,770, also shows a car in which a rock shaft running from the front platform and there provided with a lever operates at the rear of the car a door which slides to and fro, the lever at the rear end of the rock shaft connecting with the door by a link.

These patents serve to show the various mechanical instrumentalities used to connect the driver, who stood in the preferred location, with the door which he was to operate located at a distance from him.

The English patent granted to Smith, 1872, No. 1602, shows the method of connecting the driver's seat of a carriage with the door or doors thereof, so that the driver from the preferred location, to wit, the box seat of the carriage, can have control of the doors of the vehicle without moving from his position.

The English patent granted to Cooper, 1873, No. 653, shows how the doors of railway carriages can be controlled from one part of a train. Turning now to those patents which are here in evidence and which show opening and closing mechanisms for window shutters or blinds, which are devices in every way analogous to gates or doors, I find the following-described devices which bear on this matter:

142 Referring to the patent of T. Corrigan, No. 202,413, of 1878, which is for a shutter-worker, it will be seen that hinge shutters are opened and closed by means of a sliding bar and a link connecting the bar with the shutter, both shutters being capable of simultaneous operation if so desired; also a locking mechanism is provided, so that the shutter can be locked in an open or closed position. I fail to see that any patentable distinction exists between a shutter-worker and a door or gate worker.

The patent of Kelso & Ludwigs, No. 212,012, of 1879, shows a modification of the previous patent and need not be here referred to at length.

The patent of D. De F. Douglas is also for a shutter-worker, in this case sliding shutters being used, each provided with a rack, a knob on the inside of the window operating pinions, which cause the shutters to slide to and fro when either one or both of the knobs are rotated by a person occupying the desired position, which in this case and in the case of all shutter-workers is inside of the window. The patent of Brown, No. 41676, of 1864, shows another modification of shutter-worker.

The patent of Kidder, No. 91026, June 8th, 1869, shows two sliding shutters operated on the inside of the house by a shaft and a crank and link upon the outside connecting with the shutters. In this device the shutters are locked in their opened and closed positions.

The patent of Gibbs shows a shutter-worker using two bell-crank levers connecting with the shutters by pivoted links, locking mechanism being employed for fastening the shutters in any position.

It will be observed that in all these shutter-worker patents both shutters may be operated at once, if desired.

Referring to the patent of Furguson, No. 219,852, of 1879, mechanism will be found described therein for opening a fence gate from the desired location, which in this case is where the wheels of
143 the wagon pass in approaching the gate from either direction.

The patent of Wollensak, No. 136,801, of 1873, shows a method of opening ventilators for doors by means of a sliding rod capable of being locked in any desired position in connection with a pivoted link.

From the foregoing patents it will be seen that—

First. It was old to have gates on the steps or entrances of car platforms, and it was old to operate these gates by a person standing between the cars and without special mechanism; that it was also old to operate gates so located by opening and closing mechanism placed where it was desired the operator should stand.

Second. It was old to open car doors from the place where the operator was desired to stand, to wit, the front platform, by many different arrangements of mechanism, all of which serve to bring the door under the control of the operator placed at a distance therefrom.

Third. That it was old to operate shutters by various kinds of mechanism which admitted of a simultaneous operation; and,

Fourth. It was old to open fence gates and transom light or door ventilators from a distant position by means of connecting mechanisms which connected the operator, who stood in a certain desired location, with the device to be opened or closed.

9 Q. Have you examined and do you understand the letters patent, Complainant's Exhibit Complainant's Patent, and the constructions illustrated, described, and suggested therein?

A. I have examined the patent referred to in the question and I understand what is therein shown and described, and as to the constructions suggested I could make them, although the method of making them is not described.

144 10 Q. In view of the state of the art prior to the date of the patent, Complainant's Exhibit Complainant's Patent, what is — opinion as to whether there was anything new and patentable in the alleged improvement which is referred to in the first five claims of the said patent? Please give your reasons for any answer you may make.

A. I do not think there is anything new and patentable in view of that which preceded the Rosenfield invention.

In giving my reasons for this statement I will first give what I understand is intended to be the scope of the Rosenfield invention.

Rosenfield shows and describes means for opening car gates placed at the entrance of the car platforms. This object he accomplishes by using a sliding rod connected with a projection from the gate through the medium of a connecting rod or a link, in one example in the patent the connecting rod being connected directly to the gate.

In all the examples shown in the patent the gate is hinged to the post on the corner of the platform; this is what Rosenfield shows, but it is not all that Rosenfield describes. The various modifications which, as I understand from his patent, would come within his invention are set forth in the following quotation from his specification:

"It will also be seen that the connections for operating the gates may be, if desired, placed beneath the platforms. This can readily be accomplished by causing the rods or posts upon which the gates swing to extend below the platforms and providing their lower ends with arms corresponding to the levers *d*.

The links *e* and rods *f* may then be located beneath the platforms and operated by pivoted levers, the upper ends of which will occupy substantially the positions of the handles *h*.

If preferred the gates may be hinged at their opposite ends so as
to lie against the body of the car when open, in which case
145 the connections beneath the platforms will only require such
modification as is necessary to change the direction of the
motion derived from the operating levers. In some cases also it
may be preferable to provide sliding instead of swinging gates.
Such gates can be readily operated in the same manner by a very
slight modification in the connection."

Adjourned until to-morrow, the 20th November, at 11 o'clock in the forenoon.

NEW YORK, *Nov.* 20, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

HENRY L. BREVOORT's examination continued:

Referring now to these modifications, it will be seen that the first one, which consists merely in putting the operative mechanism beneath the platform, is comprehensible enough, the same mechanism as is shown in the drawing being adapted by the use of a single additional lever to perform the work, but it will be observed that in this modification no locking mechanism is described. Therefore I infer that as this is described as a modification, and as the locking mechanism is omitted, that such locking mechanism is not an essential of the invention.

The next modification which is referred to in the specification refers to the hinging of the gates at the corner of the car body, so that when opened the gates will lie against the transverse portion of the car body.

No description is given of the alterations requisite in the mechanism, the patent saying, " In which case the connections beneath the platforms can only require such modification as is necessary

146 to change the direction of the motion derived from the operating levers."

This, it will be seen, is a modification of a previous modification, for levers are to be used by the operator instead of a handle, as shown in the drawing. No locking mechanism is described, and none is suggested. From this portion of the patent it is very evident that the inventor did not intend to confine himself to the special mechanism shown and first described in his patent, for this mechanism could not possibly be adapted, without change, to a gate hinged in the position suggested in the modification, and I presume, and indeed it must have been the inventor's intention to refer the person reading his patent to the state of the art, from a knowledge of which he was to gather the necessary information to enable him to make that modification of Rosenfield's invention, which would be requisite to enable him to hinge the gates in the position suggested in his specification.

The specification then goes on and says that sliding gates can be used; it does not say which way the gates are to slide or how the connections are to be made, merely saying as follows: "Such gates can readily be operated in the same manner by a very slight modification in the connections." The connections shown in the drawings could not be used to operate the sliding gates, and in this modification, as in the other, the person wishing to practice the invention as here expressed would be forced to go to the state of the art anterior to Rosenfield to find out how to make the required connection. Thus Rosenfield has practically placed himself in the position of claiming a gate hinged at either end or a sliding gate operated in any way from the preferred position where it was desired that the operator should stand.

It was a well-known fact on the cars on the elevated road that the best position for the operator was the position referred to in the Rosenfield patent; consequently Rosenfield did not discover
147 or find out a more advantageous position in which to place the operator than had previously been the case, but he merely said that when the operator was in such a position it would be convenient to substitute mechanical devices for connecting him with the gate in place of his own arms, which had been used and which are now used on between one-third and one-half of the cars of the elevated road.

As any form of gate was within Rosenfield's invention, and as no particular connecting devices are made essential, I have done that which Rosenfield instructed me to do, and I have taken four gates of the kind Rosenfield describes, and I have operated them from the position the attendant has always occupied by devices shown in patents long anterior to Rosenfield's invention. Now, these gates and their operative devices all come within the Rosenfield patent, but it is evident that, as they are merely old devices long used for analogous purposes, if Rosenfield claims that such devices embody his invention that then such invention is not new with him. He neither discovered the best position in which the operator was to stand; he did not first put gates upon this class of car, and he does

not limit himself to any particular means of connecting the operator with the gate. Turning to the models which I now produce, I mark the one I am about to refer to Brevoort No. 1. There are two gates on this model. One I mark Rosenfield gate, and the other I mark Corrigan gate. The gate marked Rosenfield gate represents the simplest form of carrying out the modification suggested in the Rosenfield patent, where the gate is to be hinged against the corner of the car body. It will be seen clearly by inspecting this model that the connections are almost identical with some of the forms of connection shown in the earlier patents. In fact to effect this modification of Rosenfield's it was necessary to copy devices shown in the state of the art more closely than the Rosenfield mechanism
148 shown in the drawing. In fact the suggestion of Rosenfield for using "operating levers," one end of which, I understand, was to be used by the operator, is a construction practically impossible with the modification suggested.

On the other side of the model a gate is shown operated by the shutter-opener of Corrigan, less adaptation being required in this case to adapt the Corrigan shutter opener to the gate than was rerequired to produce the modified Rosenfield gate which is referred to in the patent.

If invention was required to use Corrigan's shutter-opener for a gate-opener, then more invention was required to carry out the suggestion in the Rosenfield patent, where the gate is described as hinged to the corner of the car body.

Turning now to the second model, which I mark Brevoort No. 2, it will be seen that this model has two sliding gates, such as are referred to, I presume, in the Rosenfield patent.

The gate on the right I mark Hart gate, and the gate on the left I mark Little gate. The Hart gate and its opening and closing devices is an almost literal copy of the car-door opener of Hart patent No. 163,770. The use Hart made of his device was an analogous use to that of Rosenfield's in every sense, and Hart's device is more easy of application and requires less change and modification to enable it to open the car gate which slides than would be required to adapt the mechanism shown by Rosenfield to operate the sliding gate. The Little gate is also a sliding gate and is almost a literal copy of that which is shown in the patent of Little, No. 140,052.

To open a sliding gate, such as is here shown and such as is suggested in the Rosenfield patent, less difficulty exists in adapting the mechanism of Little for this purpose than would exist in adapting the Rosenfield mechanism as shown to such sliding gate, but, as Rosenfield himself states, his own mechanism is not adapted
149 for the various gates which he proposes to use. Therefore the old mechanism of Corrigan, Hart, and Little would all be within the modifications which Rosenfield says are to be made, and it follows therefrom that Rosenfield's invention consists in operating various forms of gates by any form or kind of mechanism so long as the gate is put under the control of the operator when standing in a certain preferred location.

Now, clearly, in view of the state of the art, there is no invention in connecting any kind of a gate by any kind of mechanism, so as to put the gate under the control of an operator who has to stand in a certain preferred position, for this had been done in the case of gates upon the platforms of steam-car doors or horse cars, window shutters for house windows, ventilators over doors, and fence gates upon the ground, each one of which had been connected by mechanism, so that an operator standing in a preferred position could operate at a distance from him the device which opened or closed egress to or from the place over which he desired to have control, and, as I have before said, it was well known long before Rosenfield that the preferred position for the operator was the position which Rosenfield assigns to him and which position the operator always occupied before the date of Rosenfield's invention, and which position he does now occupy, whether he operates a gate-opener or whether he does not.

Models referred to are offered in evidence and marked " Defendant's Exhibit Models Brevoort No. 1 " and " Brevoort No. 2," J. A. S., ex., &c.

11 Q. In the structure shown in the Defendant's Exhibit Corrigan Patent are there any means whereby the sliding bars may be locked in position?

A. Yes; there is a lock shown which, by an error, was omitted in the model Breevort No. 1.

150 12 Q. Suppose that two of the horse cars having mechanism whereby the doors can be operated by handles within reach of the driver while he stands in the ordinary position were placed with the front ends together, could or could not the handles belonging to the two cars be manipulated by a single person; and, if yea, how would that compare with the combination referred to in the second claim of Complainant's Exhibit Complainant's Patent.

A. The arrangement supposed in the question, when compared with that which is set forth in the second claim of the patent, would show two platforms adjacent one to each other and two sets of door-operating devices bearing such relation to each other that a person standing upon one of the platforms could operate both of the door-moving devices and thus permit or prevent ingress or egress from either one or both of the cars.

13 Q. Please state whether or not, with the gates employed by the defendant's company upon its cars for operation by hand, without any mechanism extending from the gates to the operator it was always desirable to operate the gates on the adjacent or meeting platforms of two cars simultaneously.

A. Yes.

14 Q. And were they so operated, according to your knowledge?

A. They were, as simultaneously as possible.

15 Q. At how early a date?

A. Certainly as far back as 1877 or 1878.

16 Q. Compare the structure shown in the drawings of Complainant's Exhibit Complainant's Patent with the structure illustrated by the Defendant's Exhibit Model of Defendant's Car.

A. I will confine myself in this comparison to that which is shown in the drawing of complainant's patent. Both the complainant's and defendant's devices have their gates hinged to the corner posts of the platform of the car. In the case of the complainant's 151 patent a projecting arm or lever projects outward from the gate near the hinge. In the defendant's device a link takes hold of the gate directly. In the complainant's patent a connecting rod connects the lever projecting from the gate with a rod sliding in guides and having a handle at one end.

In the defendant's structure the link which is connected to the gate connects at the other end with a cross-head, which slides on a guide fastened to the railing of the car. This cross-head also has connected with it a second connecting rod, the other end of which connects with one end of a bell-crank lever, the other arm of which serves as the handle for the person who operates the gate.

In the complainant's device the locking of the gate in a close position is effected by rotating the handle so that it will catch behind a portion of the railing. In the defendant's device, the connecting rod running backward from the cross-head and the arm of the bell-crank lever, to which it is attached, pass the center line, and, after having so passed, are arrested by a pin, in this way forming an efficient lock independent of the guard rail. In the patented apparatus the operator pushes or pulls a sliding rod, while in the defendant's apparatus the operator moves one arm of a pivoted bell-crank lever, his hand following a part of the circumference of a circle. In one form of the patented apparatus the link connected with a sliding handle takes hold of the gate directly.

17 Q. State whether or not, in your opinion, there is a patentable distinction or difference between the combination referred to in the first claim and the combination referred to in the second claim of Complainant's Exhibit Complainant's Patent.

A. There is not. The combination of the second claim is a duplication of the device of the first claim, and this is particularly so in view of the state of the art as it has been shown to exist in this case.

Adjourned to November 21st, 1884.

152 NEW YORK, *Nov. 21st*, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

(Counsel for defendant offers in evidence a certified copy of U. S. letters patent No. 163,770, granted May 25th, 1875, to Daniel R. Hart, for improvement in devices for operating street-car doors (referred to in answer to Q. 10), and the same is marked "Defendant's Exhibit Hart Patent," J. A. S., ex'r, &c.)

(Also a certified copy of U. S. letters patent No. 140,052, granted June 17th, 1873, to Samuel H. Little, for improvement in street railways (referred to in answer to Q. 10), and the same is marked "Defendant's Exhibit Little Patent," J. A. S., ex'r, &c.)

Adjourned until the 2d of December, 1884, at 11 o'clock a. m.

NEW YORK, *Dec.* 2, 1884.

Met pursuant to adjournment.
Present: Counsel as before.

(Counsel for complainant object to all of the foregoing testimony of Mr. Brevoort which relates to what is shown in the various letters patent referred to, which are not set up in the answer of the defendant; and also objects to all the foregoing testimony which relates to the knowledge or use of prior structures, which are not referred to in the answer of the defendant.)

153 Cross-examination of HENRY L. BREVOORT by counsel for complainant *de bene esse*, subject to the ruling of the court upon the objections entered on the direct examination:

18 X Q. From the testimony which you have just given I understand you to state in substance that in view of what is shown in the various letters patent to which you have referred and of what existed in the prior state of the art as you have described it there was no invention involved in the combination of devices described in the Rosenfield patent and covered by the first five claims thereof. Am I correct or not in this understanding?

A. You are.

19 X Q. Do you find described and shown in any one of the patents to which you have referred the combination specified in the first claim of the Rosenfield patent?

A. I do not find the exact combinations of any one of the first five claims in any single one reference.

20 X Q. Do you find the combination specified in the first claim of the Rosenfield patent in any one of the structures to which you have referred as existing prior to the date of his patent?

A. I do not.

21 X Q. Do you find the combinations specified in the second, third, fourth, and fifth claims in any one of the structures to which you have referred as existing prior to the date of his patent?

A. I do not.

22 X Q. Do you find the combination described in the Rosenfield patent and specified in the first claim thereof in all of the patents to which you have referred when all of said patents are taken collectively?

A. When all the patents are taken collectively and the pre-existing knowledge is considered as it existed in the shape of cars and gates upon the elevated railroad I find not the exact combination of the claim referred to in the question, but I do find that the combination referred to in the claim is merely an adaptation to the particular situation of the old devices used for analogous purposes, 154 and that such adaptation required less exercise of the inventive faculty than is required to make the various modifications of the Rosenfield invention suggested in the complainant's patent. Therefore, taking this as a measure of invention, I have made the statement that it did not require invention to adapt the old devices to one of the elevated cars.

(Counsel for complainant object to the answer as being irresponsive, and the question is repeated with the request that the witness, having explained his position, now answer the question directly.)

23 X Q. Question 22 X Q. repeated.

A. I do not find the exact combination; no.

24 X Q. Do you find the combinations described in the Rosenfield patent, specified in either of the first five claims thereof, in all of the patents to which you have referred when all of said patents are taken collectively?

A. I answer this question as I did the last one—that I do not—with the understanding, of course, that I do find in all of the patents taken together and in view of the other pre-existing knowledge sufficient information to make the combinations without requiring the exercise of invention to produce them.

25 X Q. Will you please point out from what patents among those which you have referred to you obtain the knowledge which enables you to make the combination specified in the first claim without the exercise of invention?

A. I cannot pick any particular ones out, as they all may be said in a measure to furnish information on the subject.

26 X Q. Would you make the same answer, if the same questions were asked you, in regard to the second, third, fourth, and fifth claims?

A. I would.

27 X Q. If these patents do furnish you with the necessary information to enable you to construct the combinations of the
155 first five claims of the patent each one of these patents, or at
least some of them, must give you definite parts of that information, and you must be able, if you derived the information from the patents, to point out where you get it. Will you please make an effort to do so?

A. I will. Taking the first claim, for example, the first element referred to therein is a gate to close the side entrance to the car platform; exactly such gates are old and were part of the pre-existing knowledge. The next element is an operating handle located in a particular position. A great number of the old patents show handles, and it was an old position in which to locate a handle for operating a device at a distance from the operator, as, for example, an ordinary brake handle or the handles for operating the couplers in the Miller & Janney car-coupling system. The handle shown in the old patents were all used to open doors or gates. The next element of the claim consists of means to connect the gate with the handle. The complainant's patent says practically that any means are within the invention. All the old patents show some means of connecting the gates with the handles. Now, from the various patents and the prior knowledge I derive this information. I cannot say which particular patents further than to say that those which show gates I take into consideration when considering the first element of the claim, and so on.

28 X Q. Do you find in any of the patents referred to any means

by which an attendant standing in the passage-way leading from one car to another and at the end of the platform guard rail could, without shifting his position, open and close the gates of the side entrances to the platform?

A. In none of the patents; no.

29 X Q. Do you know of any means having been used for accomplishing this result prior to the adoption of the means now used upon the elevated railroad?

A. No, sir.

156 30 X Q. In your direct examination you have stated that the devices shown for opening and closing the gates in the Moore & Thompson patent could be readily arranged so that an attendant standing at the end of the platform guard rail and in the passage-way leading from one car to another could open and close both gates without shifting his position. Will you please state what changes would be necessary to be made in the mechanism shown in that patent to accomplish that result?

A. The handle *m* would have to be taken from the end of the car body and placed on the rail *n*. There would then have to be inserted another bell-crank lever and a connecting rod to connect with the lever *f*. This, I think, is all that would be necessary.

31 X Q. Will you please make a sketch showing the construction you have just described, lettering the parts with the same letters you have just used?

A. I do so.

Counsel for complainant offer the sketch referred to in evidence, and the same is marked "Complainant's Exhibit Brevoort Sketch," J. A. S., Ex., etc.

32 X Q. Referring now to the Corrigan patent and to the defendant's model, Corrigan gate, I would ask you to fully explain the changes you were called upon to make in the Corrigan shutter-worker, to adopt it for use in opening and closing a gate as shown in the model?

A. I made no changes whatsoever, merely putting on the pieces G and E. I did not use the hinge that Corrigan shows for placing the handle parallel with the shutter. This is all I did.

33 X Q. The gate shown in the model when closed is at right angles to the operating rod and swings inward toward the operator to open, and when open lies parallel with the operating rod, while in the Corrigan patent the shutter when closed is at right angles to the operating rod or bar, and when open is also at right angles
157 to the operating bar, it swinging through a complete half circle from its closed to its open position. You had to make some change in the structure to accomplish this difference, had you not?

A. I noticed the difference pointed out in the question. This is the difference necessitated by the location of the parts, and it required a change in the hinge, but as far as the operating mechanism goes I fail to see any change.

34 X Q. Suppose the jambs against which the gate closes in the

model were removed, would it be possible with the mechanism shown in the model, which I believe you stated is the same as in the Corrigan patent, to swing the gate outward around, so that when opened it would occupy a position at right angles to the operating rod?

A. Of course not, and neither will Corrigan's. The model will do, so far as the opening and closing is concerned, all that Corrigan's device will do. The utmost that can be claimed for Corrigan is that his shutter can go 180 degrees. I have just taken the stops off the Corrigan gate, and I have shown that it will go 180 degrees. The Corrigan gate is of course differently located in relation to the opening devices than would be a shutter, but this follows by reason of the application of Corrigan's devices to a gate instead of a shutter; thus in the case of the Rosenfield patent the gate may be at different angles to the opening devices, depending upon the form of gate used.

Adjourned until December 5th, 1884.

158 NEW YORK, *Dec. 5th*, 1884.

Met pursuant to adjournment.
Present: Counsel as before.

35 X Q. The gate shown in the model will, as you have just demonstrated, when the jambs are removed, swing outward into a position about in line with the operating rod. In a shutter-worker it is necessary, is it not, in order that the apparatus should be successful, that the shutter should be capable of swinging outward to a position considerably farther than this—that is to say, should be capable of swinging around so as to lie against or nearly against the wall of the building?

A. Yes.

36 X Q. And the Corrigan apparatus is such that the shutter is capable of doing this, is it not?

A. There is some doubt about how far it could go back. It would probably make an angle of twenty degrees with the building.

37 X Q. In this respect, then, the Corrigan apparatus as shown in the patent is different from that shown in the model, is it not?

A. It has the same capacity of movement as the shutter in the patent. The only difference is that the operating devices are at right angles to the gate when closed and parallel with the gate when opened, while in the patent the operating apparatus is at right angles when closed and substantially at right angles with the shutter when the shutter is opened.

38 X Q. You have employed a different kind of hinge for the gate in the model from that shown for the shutter in the patent, have you not?

A. I have employed the same kind of a hinge, but I have put it on one side of the gate, and have not supported it with brackets projecting from the gate, in which method it is supported in the patent.

39 X Q. The hinge shown in the patent, as I understand
159 it, is of such construction that the hinged end of the shutter
describes the arc of a circle as the shutter is opened or
closed; am I correct in this?

A. Yes; and so does the like part of the gate. The hinge fastened to the shutter is merely a portion of the shutter extended at a different plane from the main body of the shutter. Identically the same arrangement can be adapted for the gate if desired.

40 X Q. Could the hinge shown for the shutter in the patent be applied to the gate in the model and the gate still operate in the manner it now does?

A. Yes.

41 X Q. If this is the case, why did you not use the hinge shown in the patent?

A. For this reason: Because I wanted to show in the model not the entire Corrigan device, but only so much of the Corrigan device as was used for the opening and shutting operation, and I wished to show such parts of the device as applied to the gate ordinarily used on the elevated railroad, it being easier to adapt Corrigan's devices to a gate than it was to make the structure shown on the other side of the model which I made from the Rosenfield patent and which required more devising and a greater departure from Rosenfield's devices as shown.

(Counsel for complainant object to all of the answer after the word "railroad" as being irresponsive, irrelevant, and immaterial.)

42 X Q. Suppose that the hinges of the structure shown in the Corrigan patent were reversed in position so as to be upon the inside of the shutters, could the shutters be opened inward instead of outward by the apparatus shown, as is the case in the gate in the model?

A. Yes, it could, if the hinges were right and the window was out of the way.

43 X Q. Would not the operating mechanism interfere with the swinging inward of the shutter?

160 A. I think not more so than it does with the gate.

44 X Q. Suppose the position of the pivot of the hinges in the Corrigan patent were not changed relatively to the position of the operating rod and its guide, could the shutter be swung inward so as to lie parallel or substantially parallel with the operating rod?

A. No.

45 X Q. It is necessary, is it not, in the case of the gate as shown in the model, that it should swing around so as to lie substantially parallel with the operating rod, so as to not partially close the passage-way to the car door?

A. Yes.

46 X Q. Then you have had to change the relative position of the parts—that is, the hinge and the operating rod—in order to secure this result in the model?

A. Yes; I have had, of course, to reorganize the Corrigan device.

47 X Q. Could you change the position of the operating devices—

that is, the operating rod, &c.—in the Corrigan structure, as shown in the patent, so as to allow the shutter to open inward and lie back parallel with or substantially parallel with the operating rod?

A. Not as the shutter is shown in the patent as hinged.

48 X Q. In the structure shown in the Corrigan patent, as I understand it, the operating rod and link are attached to the extreme lower end of the shutter, while in the model the link and rod are attached to the gate at a point about one-fourth of its length from the top. Would it be practical or even possible to attach the operating link and rod to the shutter at a corresponding point?

A. No. It would be possible, but would interfere with the window.

161 49 X Q. Would it be practical to attach the operating link and rod to the gate of the model in the position in which the operating link and rod are attached to the shutter in the patent?

A. Yes; if a lever was introduced to operate to rod; not otherwise.

50 X Q. In the patent the operating link E is pivoted in a bracket or projection extending inward from the shutter, while in the model the corresponding part is pivoted directly to one of the vertical rods composing the gate. Is this a difference of any importance?

A. It enables the gate to open further than it would were it pivoted from a projection from the gate.

51 X Q. If the link of the operating rod in the model was pivoted to a projection extending inward from the gate, as in the patent, such projection would cause the gate to stand some distance away from the end guard rail, so as to partially close the passage-way leading to the car door?

A. Yes; the gate would not open as fully as it now does.

52 X Q. And such position of the gate when opened would be objectionable, would it not?

A. It would.

53 X Q. If the operating link E of the patent were pivoted directly to the shutter, as is the case with the link in the model, it would prevent the shutter from opening beyond a line about parallel with the operating rod, would it not, and this would be objectionable, would it not?

A. The shutter would not open so far, and that would not be desirable.

54 X Q. As I understand the structure shown in the Corrigan patent the operating rod F is jointed, one part of the rod always remaining in the guide G while the other part is sometimes in the guide and sometimes entirely withdrawn from the guide, and the link E is pivoted to the operating rod at the point of this joint. Is there any such construction as this shown in the model?

162 A. The link is pivoted to the rod in the model, but the rod is not arranged to swing at right angles to its line of motion.

55 X Q. In other words, it is not jointed?

A. No.

56 X Q. Do you understand from the patent that there is an especial purpose in having the operating rod jointed?

A. Yes; for the purpose of getting it out of the way when the shutter is closed.

57 X Q. And if it were not jointed it would project into the room when the shutter is closed and thus be very objectionable?

A. It would, unless the window was close to a wall at right angles to itself. Under such circumstances the rod would merely project along the wall when the shutter was closed, and the same situation would be found as is found in the case of the model, where the railing is approximately at right angles to the gate when closed.

58 X Q. Even in such a case as you suggest would not the rod, owing to the angle at which its guide is set, project outward into the room and away from the wall, even if there was a wall at right angles to the window?

A. It would slightly.

59 X Q. If you had reproduced the jointed rod, as shown in the patent in the model, would not the free end of the rod, which is entirely withdrawn from the slide when the shutter is closed, have been liable to swing away from the guard rail, so as to be a very objectionable feature in the gate-operating mechanism?

A. Yes.

60 X Q. From what you have just said I understand that you were obliged, in reorganizing the apparatus shown in the Corrigan patent, so as to produce the construction shown in the model, to convert a house into a railway car, a window opening into the side entrance to the car platform, remove the window therefrom, convert one of the
163 pair of shutters into a gate, hinge that gate in a different relation to the walls of the structure, employ a different form of hinge, locate the operating rod in a different relation with respect to the hinge, connect the rod and the link to the gate in a different position vertically of the gate, omit the projection shown in the patent to which the link is pivoted, and pivot the link directly to the gate; use a rigid rod instead of a jointed one, and that all of those changes were essential in order to produce a gate and operating mechanism which would be practically successful for use upon railway cars.

A. I have made the changes enumerated. I do not think I needed to have made all recited in the question, but, to make a throughly practical job, almost all of the changes had to be made.

61 X Q. Do you find any description in the Corrigan patent which suggests or describes any of these changes?

A. No.

62 X Q. And you are of the opinion that it would have required no invention on your part prior to the date of the Rosenfield patent to have done all this?

A. It would not.

63 X Q. And, having done this, do you think that it would require invention to locate the operating mechanism beneath the car platform and move the operating rod by means of a pivoted lever

which is described as the first modification of the Rosenfield patent?

A. No; I don't think that any of these means of connection required invention to adopt them to the gate of an elevated railway car in view of the state of the art, but I do say that if it required invention to adopt Corrigan, Hart, or Little to the gate of a railway car, then it required as much, if not more, invention to adopt mechanism which would conform with the suggested modifications contained in the Rosenfield patent.

164 (Counsel for complainant object to all that part of the answer following the words "the state of the art" as irresponsive and irrelevant.)

64 X Q. Having the Rosenfield patent before you, do you think it required invention on your part to produce the structures shown in the models and marked Rosenfield gate, Hart gate, and Little gate?

A. No; I don't think it did. It only required, as the Rosenfield patent says, "modification."

66 X Q. Do you regard the invention described in the Rosenfield patent as useful in its application to the purposes intended as therein set forth?

A. I regard a device for this purpose as a useful thing.

67 X Q. And you do not know of any patent or of any pre-existing knowledge which suggested the possibility or practicability of providing operating handles located at or near the inner ends of the platform guard rails of a railway car and connecting devices by which, through these handles, the attendant could open and close the platform gates?

A. I know of no information of any kind before Rosenfield which describes this particular arrangement of gates, operating handles, and connections as set forth in the question.

68 X Q. Did you not testify in the case of John Stephenson *v.* The Brooklyn Cross-town Railroad Co., which was a suit brought upon U. S. letters patent 142,810, granted to J. A. O'Haire Sept. 16th, 1873, and in which, among other things, the patent of Kidder, No. 91026, which you have heretofore referred to in this deposition, was set up as anticipating the invention in the patent sued upon?

(Counsel for defendant objects to the question as being immaterial, irrelevant, and not properly in cross-examination.)

A. I did.

165 69 X Q. In the course of your deposition in that case and in comparing the invention claimed in the O'Haire patent with that shown and described in the Kidder patent, did you not, in answer to the following questions, testify as follows: "Q 17. State whether or not you find in said Kidder patent the invention described and specified in 'Complainant's Exhibit O'Haire,' giving your reasons for any conclusions. A. I do not find in the Kidder patent the invention referred to in the O'Haire patent. My reasons for this opinion are, the Kidder patent does not describe a car having a door

to be operated from the front platform by the driver. The Kidder patent does not describe a lever to rotate the spindle, but, on the other hand, it does describe a knob which would be insufficient in size if applied to a car for the purpose of *the* operating the door. The spindle in the Kidder patent is not shown or described as nor is there any suggestion of making the spindle sufficiently long and strong to reach from one end to the other of a horse car. Assuming that one of the blinds in the Kidder patent can be called a door (which it is not and cannot be), then it will be found that the point of attachment of the connecting rod to the door would come upon the margin which is outside of the casing, or rather upon the front edge. Now, with this construction, when the door was closed the connecting rod and crank would always lie across the glass portion of the door transversely, in full view of the passengers and in such position as possibly to injure the hands of careless passengers leaning against the door when the car is full. It will also be noticed that in the Kidder patent it takes a little more than half a revolution of the short spindle there shown to completely open or close either one of the blinds. In the O'Haire device and in the defendants' device as shown in the model a very much less rotation of the long rod is
necessary, and a half a revolution or more makes practically
165½ an unsuccessful device and one which, if it can be used at all,
is not sufficient in comparison with the O'Haire device or with the defendants' device. There is one feature of the Kidder device which makes that device utterly useless when applied with the various necessary modifications to a street car, and this feature is that in the Kidder device the construction of the parts is such as to lock the blind in the shut position and lock the blind in the open position. Now, I have already said in a previous part of this deposition that any device applied to a street car which took the control of the door, either when it was to be opened or when it was to be closed, utterly out of the hands of the passengers would be a useless device, and this would be the main difficulty with any modification of the Kidder device adapted to a street car.

"I might add, although it is not as important as the other points noted, that the method of hanging the blinds in the Kidder device would not be a practical method of hanging the door of a street car.

"In the Kidder device I do not find any slot operating in connection with a pin or roller; but, on the other hand, a lever and a connecting rod organized in relation to the blind in a position substantially different from that occupied by the pin and slot of the O'Haire device.

"18 Q. Please state whether or not in your opinion a person skilled in the art of making street cars in the year 1869 could, with the said Kidder patent before him, have made the combination described and specified in said 'Complainant's Exhibit O'Haire,' without the exercise of invention on his part; give your reasons for your conclusion."

"(Same objection as to question 13.)

"A. I do not think that he could. My reasons for this opinion are as follows: First, the Kidder device does not contain the parts referred to in the O'Haire patent; second, the Kidder device 165¾ is not a car with a transversely moved rear door and a front platform; third, the Kidder device could not be taken directly without substantial alteration and modification and be used upon a car. In adapting the Kidder device for use upon a car having a rear door and a front platform it would be necessary, first, to put an operating lever for the driver in place of a knob; second, it would be necessary to increase the diameter of and greatly increase the length of the spindle which passes through the window casing, so that it might serve the purpose of the rod *i* of O'Haire; third, it would be necessary to fix the lever and the connecting rod to the inner margin of the door instead of to the outer margin of the blind, as shown in Kidder; it would then be necessary to cut away a portion of the side of the car so that the outer end of the lever, where it is jointed to the connecting rod, could pass outside of the car when the door was open; fourth, it would be necessary to so arrange the devices in relation to the car as to preclude the possibility of the door being locked, as described in the Kidder patent for a blind, when fully opened or closed; fifth, some proper relation would have to be found for the shaft. After all these alterations had been made the O'Haire device would not be found, and what would be found would be an exceedingly poor device for operating the door, from the fact that the shaft or rod would have to make an entire half revolution to fully open or close the door."

"89 X Q. Would the alterations which you mentioned in question 18 as needed in order to change the Kidder device into a car-door opener have required anything more than mechanical skill in suitably proportioning and locating the parts and in substituting the lever, pin, and guiding frame of O'Haire for the lever and link motion of Kidder, and also eliminating the locking feature; if so, what.

"(Objected to as incompetent.)

166 "A. Taking the Kidder device as I find it in the Kidder patent and in complainant's Kidder models, it is my opinion, for the reasons given in an answer on the direct examination, that it would require invention, in view of such Kidder device, to construct and organize the O'Haire device. I cannot answer this question with the various restrictions put upon it, and consequently I have answered it in the way that I have.

"The only fair comparison is between the Kidder device as shown and the O'Haire device as used."

"90 X Q. State *seriatim* which of the alterations you have specified are not within the range of mechanical skill.

"A. The alterations which are necessary to transform the Kidder into O'Haire and fit the altered parts for the new purpose and the new use must be taken as a whole, and in this way only can it be determined whether invention was or was not required in making the various alterations.

"(Answer objected to as irresponsive and made by way of argument for complainant.)

"91 X Q. I see that I must take up the alterations *seriatim*. If more force is required to operate a car-door than a shutter, would it require invention to enlarge the radius of the knob?

"A. The question informs me that the alterations are to be taken up *seriatim*. I was willing to take them up *seriatim* in my last answer, but thought it would be needlessly prolonging the testimony. I will now, in the hope of shortening it, make the following statement:

"A certain number of changes are necessary to transform the Kidder device into the O'Haire device, and in my direct examination in this case I stated the principal alterations which were necessary. Each step in the alteration and reorganization of the Kidder
device may be regarded individually and separately as a mat-
167 ter involving mechanical skill only or as a matter involv-
ing invention. I do not know how the court would regard
such a question; but the result of the matter is that these series of steps, when all made, do produce a device operating in a different way, adapted to a different use, and consisting of different parts, and consequently the result of the series of steps is a result which it required invention to produce, and this is the only real question here concerned.

"Whether the steps are discussed one by one, as requiring invention or as only requiring mechanical skill, is a question which is only to be decided by the more important question of whether the result of the series is or not any invention.

"My opinion is that it is an invention; and in view of such an opinion, if it is considered expedient to put to me the series of questions proposed, I shall answer each one, having in mind only the fact that by this series of steps an invention results.

"(Same objection as above.)

"I consequently answer the present question, in view of my above explanation, with yes, as this is one of the steps necessary to produce the invention.

"92 X Q. Would this be your answer to questions like the above relating to each of the alterations you have suggested?

"A. In view of the fact that each one of the elterations are necessary and essential steps for the purpose of reaching the invention of O'Haire, my answer would be the same as given to the above question."

(Counsel for defendant makes the same objections as to the previous questions.)

A. I did.

70 X Q. Do you not think that it required as much invention to produce the Rosenfield devices, in view of Corrigan, as it did to produce the O'Haire device, in view of Kidder.

(Same objections.)

168 A. I do not think the two cases are at all parallel. It would not have required any invention to have produced the O'Haire device, if the claim had been practically for any device to connect the driver standing on the front platform with the rear door of the car. The O'Haire patent was not for this, however. It was for a specific and particular form of device, which the defendants had almost literally copied; therefore Kidder, who had a substantially different mechanical device, did not bear in any way upon the invention of O'Haire. In this case, however, Rosenfield claims substantially any form of mechanical device which will connect the gate and the attendant, however the gate and the attendant may be arranged. Now there is no invention in this.

71 X Q. O'Haire was not the first, was he, to provide mechanical connections by which the driver, standing on the front platform, could open and close the rear door of the car?

(Same objections.)

A. No, and neither was Rosenfield the first to apply mechanical connection for opening the side gate of a car platform by a person standing in the center of the car platform, as shown in the patent to Moore & Thompson.

(Counsel for complainant object to all of the answer after the word "No," as irresponsive and irrelevant.)

Redirect examination by E. H. Brown:

72 Re-D. Q. You have referred to the Miller and Janney car-coupling system; will you please explain that more fully and also its bearing in this case?

A. In both of these systems it is necessary for the attendant to operate the coupling devices while he stands at the inner end of the guard rail of the car, and to this end in both systems a lever is arranged with its handle in the position shown by 169 Rosenfield's patent, so that the attendant can uncouple the cars, taking hold of either handle he may wish to operate with, or using both if desired. This shows that to operate devices by a person standing at the inner end of the guard rail of the car, and which devices were at a distance from him, that it was old to place a handle in positions selected by Rosenfield for the location of his handles. The Miller system has been in use since about 1865 and the Janney system, I think, since 1877, in the United States, on all the principal railroads.

I hand to the examiner to be marked a drawing showing the end view of a car fitted with the operating handle for effecting the uncoupling operation as used in the Janney system, which handle is located at the inner end of the guard rail of the platform. At A is seen the handle, at B the inner end of the guard rail of the platform, and at C will be seen the coupling device, which is operated by means of the handle and the brakeman who stands upon the platform, the location of said coupling device being such that the brakeman standing in the desired position, to wit, upon the platform, would be unable without some connecting device to operate the coupling mechanism placed at a considerable distance from the desired position occupied by the operator.

(Counsel for defendant offers in evidence the drawing referred to by the witness and the same is marked "Defendant's Exhibit Brevoort Drawing of Janney Coupler.")

HENRY L. BREVOORT.

Sworn to before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned to Dec. 23, 1884, at 11 o'clock a. m.

170 NEW YORK, *January 12th*, 1885.

Present: Counsel as before.

HENRY L. BREVOORT, being recalled, testifies on behalf of the defendant as follows:

73 Q. Please look at Defendant's Exhibit Locomotive Cab Model No. 2 and say whether you understand the combination of cab, swinging door, and door-operating mechanism comprised therein.

A. I have carefully examined the model. I understand the mechanism for operating the door. I think I have seen the same form of mechanism on locomotives. The mechanism consists of the following parts: The run board and seat of the cab are practically one piece, the seat portion being within the cab and the run-board portion outside of the cab running along outside of the boiler, and is used by the fireman or engineer when they wish to walk to the front of the engine while in motion. To enable them to get from the cab to the run board the door shown in the model is provided. To enable this door to be operated and to enable it to be partly opened for the purposes of ventilation and to hold it closed there is provided a sliding block, which slides upon a guide which is attached to the side of the cab. To this sliding piece a connecting rod is pivoted, the other end of which takes hold of a properly formed attaching means connected to the door. There is a set screw in the sliding piece which serves as a handle and likewise serves the function of holding the door in any desired position. When the door in this arrangement is opened it swings inwards and lies parallel with the door-operating mechanism and against the same.

74 Q. Please compare the combination of the door and door-operating mechanism comprised in Defendant's Exhibit Locomotive Cab Model No. 2 with the gate and gate-operating mechanism which is described and illustrated in Complainant's Exhibit Complainant's Patent.

171 A. I have made the comparison called for by the question. With the sole exception that in the patent the parts are applied to the gates of the car, while in the model the devices are applied to the door of a railway cab, I find no difference, the operating mechanism being substantially the same in both cases. To

take the operating mechanism from the locomotive cab and put them on the car platform is merely a double use of the same mechanism.

75 Q. In view of your attention having been called to the mechanism illustrated in Defendant's Exhibit Locomotive Cab Model No. 2, would you like to add anything to the summary of the state of the art which you gave at the end of your eighth answer?

A. I should. I should like to add as follows:

Fifth. It was old to open and close the door of a locomotive engine cab by the mechanism of the complainant's patent and to hold it closed when it was desired, the operator sitting at a distance from the door.

75½ Q. Is there anything in a locomotive cab which renders it desirable to operate a cab door from a distant point?

A. There is, particularly for the door on the right-hand or engineer's side of the cab. The reversing lever, at the rear of which the engineer has to stand or sit while running the engine, prevents him from conveniently operating the door without some mechanism reaching from where he stands or sits to the door.

(Counsel for complainant object to the foregoing testimony upon the ground that it relates to the prior knowledge and use of a structure now set up in anticipation of the patent sued on without having been referred to in the answer or the name of any person or persons who had knowledge of such prior use given or the place where such use was had stated.)

172 Counsel for defendant admits that the above objection is taken in time.

Cross-examination by counsel for complainant, subject to and reserving said objections:

76 X Q. As I understand you, you regard the door opening and closing mechanism shown in the model about which you have just been testifying as substantially the same as the gate opening and closing mechanism shown in the Rosenfield patent?

A. Yes; substantially.

77 X Q. Will you please specify the corresponding parts in the model and patent?

A. I will. The door of the model and the gate D of the patent correspond. The connecting rod corresponds with that marked *e* in the patent, Fig. 3. The sliding block of the model corresponds with the sliding rod *f* in the patent. The stationary bar of the model on which the block slides corresponds with stationary piece *g* of the patent on which the rod *f* slides. The screw and handle of the model corresponds with the handle *h* of the patent. In both cases the connecting rod is pivoted to the device which the mechanism operates.

78 X Q. Do you understand that this door opening and closing mechanism shown in the model is provided upon locomotives for the purpose of enabling the engineer to open or close the door while he is standing or seated at too great a distance therefrom to reach it

with his hand, or is this capability of the mechanism a mere incident?

A. It is not a mere incident. It is put there purposely so that the engineer can control the door when he is so far from it that he cannot reach it with his hand. Thus, for example, suppose the fireman had gone out of the door on the left, had gone around the front of the engine, and wished to re-enter the door of the cab on the right, which we will suppose was shut. Now, the engineer would merely have to move his hand, open the door, and
173 admit the fireman through the door into the cab of the engine.

79 X Q. And do you mean to say that this mechanism is provided especially for the purpose of meeting such contingencies as this?

A. Yes; and also for the purpose of holding the door in any desired position for the purposes of ventilation.

80 X Q. Is it not this latter reason that has caused this mechanism to be placed upon locomotive cabs?

A. No. I think both reasons.

81 X Q. It is an essential thing in this mechanism, is it not, that the fastening device should be so arranged that the door can be locked in any intermediate position between its open and closed positions?

A. No; it is not essential, but it is a valuable feature.

82 X Q. Would not any door-opening mechanism be practically worthless on a locomotive engine cab that did not provide for this?

A. No.

HENRY L. BREVOORT.

Sworn to before me—

JOHN A. SHIELDS,
Examiner, &c.

174 NEW YORK, *December* 23, 1884.

Met pursuant to adjournment.

Present: Counsel as before.

HENRY A. WEBSTER, a witness on behalf of the defendant, being called and duly sworn, testifies as follows:

1 Q. What is your name, age, residence, and occupation?

A. Henry A. Webster; age, forty-five; No. 1631 4th avenue, New York city; general foreman in the car shop of the Manhattan Elevated railroad.

2 Q. How long have you held that position?

A. I was employed in the year 1878 as master of car repairs in the New York Elevated railway, and then in 1881 (as near as I remember) I became general foreman as above.

3 Q. State whether, since your connection with the New York Elevated railway, in the year 1878, you have been familiar with the use of gates at the sides of the platforms of the cars used on said railways.

A. Yes, sir; I have.

4 Q. In the years 1878, 1879, 1880, and 1881 how were such gates arranged and used?

A. They were all hinged to the body of the car. They were hinged to the corners of the car body, and when opened they were swung against the end of the car body. It was the custom of the brakeman or guard to stand between the platforms of said cars, resting with one foot on each platform, reaching with his hand and unlatching one of the gates, and with the other hand unlatching the other, holding the gates in that position until the train stops to receive passengers, while then the gates are thrown open.

5 Q. Since when have the gates, to your knowledge, been operated in the manner described in your last answer?

A. Since my connection with the road.

6 Q. When first, to your knowledge, have gates been hinged
175 to the posts at the end of the guard rails which are arranged
upon the platforms of railway cars?

A. Since 1878; on the cars of what was then the Metropolitan elevated railroad.

7 Q. Please look at Defendant's Exhibit "Model of Defendant's Car" and state what it represents.

A. It represents a gate, a gate-opener, and lock now in use on the standard cars of the Manhattan elevated railroads. I mean by standard cars a style of car known formerly as the Metropolitan.

8 Q. When, if you know, was the first car of the Metropolitan elevated railroad provided with a gate and gate-operating mechanism, as illustrated in the Defendant's Exhibit "Model of Defendant's Car?"

A. On November 4th, 1882.

9 Q. And when, if you know, were other cars on that railroad equipped with such gates and gate-operating mechanism?

A. They were continually from that date, at the rate of from four to twenty cars a week, until that class of car was all equipped.

10 Q. Were any patterns made from which to work in equipping cars with such gates and gate-operating mechanism?

A. There were; commenced as early as June 3d, 1882.

11 Q. Do you know when they were sent to the shop to work from?

A. The patterns were sent to the foundry on July 16th, 1882.

12 Q. Were any drawings made to work from in equipping the cars with these gates and gate-operating mechanism?

A. There were.

13 Q. Do you know when those drawings were made? If so, please state.

A. Those drawings and blue prints were made June 3d, 1882.

14 Q. Can you produce those drawings?

176 A. Yes, sir; I can produce prints from the original drawings.

(Prints of drawings referred to offered in evidence and marked "Defendant's Exhibit Drawings of Defendant's Gate-Operating Mechanism," J. A. S., ex'r, &c.)

15 Q. In your fourth answer you described gates and the manner in which gates were operated, as employed in the years 1878, 1879, 1880, and 1881, upon cars of the New York elevated railway. Please state whether the use of gates arranged and operated as described in that answer has ever been discontinued.

A. It has not.

16 Q. Please look at "Defendant's Exhibit Locomotive Cab Model" and state what it represents, if you know.

A. It represents a door or window opener and lock, as used on engine cabs for the past twenty-five years, arranged to open outwards or inwards.

17 Q. Do you mean that, as illustrated in this model, the door or window is illustrated as being capable of opening both outwards and inwards?

A. This model represents the door or window as opening outwards. To open it by swinging it inwards or towards you, you lengthen the guide or bar upon which the slide operates and then place the hinges at the inner side of the door.

18 Q. How long, to your knowledge, have doors been arranged upon locomotive cabs so as to be capable of swinging inwards in opening and combined with operating mechanism similar to that shown in "Defendant's Exhibit Locomotive Cab Model?"

A. I should say twenty-five years.

19 Q. Are you certain that they have been so used for any definite time? And, if so, please name the time of which you are certain.

177 A. I have known them to be used for twenty-five years.

20 Q. Please state what the board having the bar attached to it and the slide working on it in "Defendant's Exhibit Locomotive Cab Model" represents?

A. The left-hand side of the locomotive cab, when looking towards the front of the engine, the swinging door being arranged at the forward end.

21 Q. If the door or window were made to open by swinging inwards, what would it swing towards in opening?

A. Toward the inner surface of the side of the cab to which it was hinged.

22 Q. For what have these doors or windows been employed on locomotive cabs during the time which you have testified to their employment?

A. For the engineer and fireman to pass through to the front of the engine, and also to admit air.

Adjourned to January 12th, 1885, at 11 a. m.

New York, *Jan.* 12, 1885.

Met pursuant to adjournment.
Present: Counsel as before.

23 Q. Since your last examination have you had a model made to illustrate doors arranged upon locomotive cabs so as to be capable

of swinging inwards in opening and combined with operating mechanism as previously described by you?

A. I have; yes, sir, and here produce it.

Model referred to by witness is offered in evidence, and the same is marked "Defendant's Exhibit Locomotive Cab Model No. 2," J. A. S., ex'r, &c.

24 Q. State how correctly Defendant's Exhibit Locomotive Cab Model No. 2 illustrates the locomotive cabs having the
178 inwardly opening doors and operating mechanism which you have known the use of for twenty-five years, as previously testified to by you.

A. As far as the doors and the front of the cab and the attachment of the doors to the cab are concerned, this model is correct. The operating mechanism is also correctly represented in the model. The combination of the cab, door, and operating mechanism is correctly represented in the model.

25 Q. When you have spoken in your testimony of the use of doors and operating mechanism for locomotive cabs, in what country was that use, to your knowledge?

A. On the N. Y., N. H. & Stonington R. R., Connecticut, U. S., and also on the New Jersey Southern R. R., the N. Y., Boston & Montreal R. R., and the N. Y. Elevated R. R.

26 Q. Referring now to Def't's Exhibit "Drawings of Def't's Gate-Operating Mechanism," please state what is the part I letter A on said exhibit?

A. That is the bar that is attached to the railing of the platform.

27 Q. What is the part B?

A. That is the slide working on the bar A.

28 Q. What is the part C?

A. The arm connected to the slide B and to the gate.

29 Q. What is the part D?

A. That is an arm that is connected to the crank E and the slide B.

30 Q. What is the part G?

A. That is a pivot that the crank E is attached to and is attached to the bar A.

(Counsel for complainant objects to all parts of the foregoing testimony of the witness, Mr. Webster, which relate to the knowledge or use, prior to the date of the Rosenfield patent, of the gates provided with gate opening and closing mechanism, for the reason
179 that the name of this witness as having invented or used or known of the use of the invention claimed in the Rosenfield patent in suit prior to the making of the same by said Rosenfield, nor his residence, nor where nor by whom said invention was used, are not stated in the answer, and no statutory notice thereof given.

Counsel for complainant also object to the introduction of the model, Def't's Exhibit Locomotive Cab Model No. 2, and the testimony relating thereto, and also the drawing, Def't's Exhibit "Drawing of Def't's Gate-Operating Mechanism," for the same reasons.

It was agreed and consented by counsel for defendant that the above objections might be reserved until the close of the direct examination, and that they are taken in time.

The following cross-examination is made by counsel for complainant subject to and reserving the above objections:

31 X Q. Who, if you know, designed or invented the gate-opening mechanism illustrated in the drawing, Def't's Exhibit " Drawings of Def't's Gate-Operating Mechanism ? "

A. Mr. T. W. Peeples was the originator.

32 X Q. Did Mr. Peeples design this particular mechanism shown in the drawing?

A. I think the draughtsman designed that.

33 X Q. When you say Mr. Peeples was the originator of this mechanism do you mean that he was the originator of the idea of providing a mechanism for opening and closing the gates, or that he was the originator of this particular system or mechanism ?

A. He was the originator of this particular system, I should say.

180 34 X Q. Were any other plans submitted or tested by Mr. Peeples or others, to your knowledge, for gate-opening mechanism, to accomplish the same result as that accomplished by the mechanism now used, before this mechanism was finally adopted and put into use?

A. Yes; we had an arm and bell-crank lever attached to the railing and gate.

35 X Q. This apparatus was only tested and not put into use, was it not?

A. That is all.

36 X Q. It proved unsatisfactory, did it?

A. Yes, sir; it was unhandy.

37 X Q. From what you say I understand, then, that you and others connected with the elevated railroads had for some time prior to the final putting into use of the present mechanism considered that a mechanism which would accomplish this result would be a desirable thing?

A. Yes.

38 X Q. And there had been some considerable experimenting done with the view of providing such mechanism, had there not?

A. There had.

39 X Q. Who ordered this mechanism shown in the drawing, Def't's Exhibit Drawing of Def't's Gate-Operating Mechanism, to be applied to the cars?

A. It was applied under my supervision. I received instructions to apply it from Mr. Peeples, the master mechanic.

40 X Q. Do you know whether or not Mr. Peeples received instructions in regard to applying this mechanism from Mr. Hain ?

A. I do not positively, but undoubtedly he did.

41 X Q. Mr. Hain knew that it was being applied, did he not?

A. Yes, sir.

42 X Q. Referring to the model, Def't's Exhibit Locomotive Cab Model No. 2, as I understand the door-operating device there shown,

181 it is arranged so that it occupies a position as high or higher than the head of the engineer as he stands on the floor of the cab or sits on the seat in the cab, so that in opening or closing the door he is obliged to reach up about even with his head to operate it. Am I correct?

A. Yes, sir.

43 X Q. Does the horizontal platform or shelf, which is arranged on the right-hand side of the cab just beneath the operating mechanism, represent the seat for the engineer?

A. No, sir; the seat is usually a tool-box sitting on top of this shelf, and forms his seat.

44 X Q. Referring now to Defendant's Exhibit Model of Defendant's Car, will you please state whether or not when two cars are coupled together and have the gates hinged in the position shown in the model, but are not provided with the opening and closing mechanism, it is possible for the guard while standing in the passage-way leading from one car to another to open the gates of the two cars without shifting his position—that is to say, stepping first onto one platform to open one gate and then onto the other platform to open the other gate?

A. It is not possible unless the gates are first unlocked, with this style of car.

45 X Q. Will you please explain how the guard was in the habit of opening the gates of the two cars when the gates were arranged as stated in the last question?

A. By first unlocking one gate and leaving it partly open and then unlocking the other gate and holding them until the train stopped and then opening them for the passengers.

46 X Q. In unlocking the first gate the guard had to step onto one of the platforms, and then, to unlock the other gate, he had to step around onto the other platform, did he not?

A. Yes, sir.

182 47 X Q. Have you compared the drawing, Defendant's Exhibit Drawing of Defendant's Gate-Operating Mechanism, with the original drawing, which you have testified was made June 3d, 1882, and is it a correct copy of the same?

A. I have, and it is.

Redirect examination by E. H. Brown:

48 Re-D. Q. Just what do you mean that the draughtsman did in respect to the particular mechanism shown in Defendant's Exhibit "Drawing of Defendant's Gate-Operating Mechanism?"

A. He made the drawings.

49 Re-D. Q. What did you mean in your 32d answer when you said that the draughtsman designed that mechanism?

A. I presume that Mr. Peeples gave the directions for having the gate-opener or lock devices made, leaving the details to be worked out by the draughtsman.

50 X Q. What do you mean by considerable experimenting in your 38th answer?

A. When we experimented with a sort of a bell-crank at the top of the gate.

51 X Q. Do you mean the device referred to in your 34th answer?

A. Yes, sir.

H. A. WEBSTER.

Sworn to before me—

JOHN A. SHIELDS,
Examiner, &c.

Adjourned until Jan. 17, 1885,

183 N. Y., *Jan.* 17, 1885.

Met pursuant to adjournment.

Present: Counsel as before.

THOMAS LONERGAN, a witness examined on behalf of the defendant, being duly sworn, deposes and says as follows:

1 Q. What is your name, age, residence, and occupation?

A. Thomas Lonergan; 38 years of age; New York city, N. Y.; I am a locomotive engineer, employed by the elevated railroad in this city, and have been so employed for the past six years.

2 Q. Where were you employed previously?

A. On the Central railroad of New Jersey.

3 Q. In what capacity?

A. Locomotive fireman.

4 Q. For how long?

A. Seven years.

5 Q. Have you any knowledge of the use of doors or windows at the front of locomotive cabs?

A. I have.

6 Q. How did they open?

A. With slide and rod.

7 Q. Were they swinging doors?

A. Yes, sir.

8 Q. To what part of the locomotive cab were they hinged?

A. The forward part.

9 Q. Where was the slide and rod located?

A. To the side of the cab and to the top of the door or window frame.

10 Q. When the door or window was opened which way did it swing?

A. Inside of the cab.

11 Q. Where first did you see the door or window hinged to the cab and combined with the slide and rod so that the door or window would swing inwards in opening?

A. On the New Jersey Central railroad.

184 12 Q. Do you mean on one of the locomotives on that road?

A. Yes, sir.

13 Q. Was that or was that not on the locomotive that you worked?

A. It was.

14 Q. And when was that?

A. In 1874.

15 Q. For how long a period of time were you familiar with that locomotive?

A. Two years, to the best of my knowledge.

16 Q. Which two years?

A. From 1874 to 1876.

17 Q. Were or were not the door or window, the slide and rod, in use on that locomotive in the manner you have described during that time—that is, during those two years, 1874 to 1876?

A. I went on that locomotive in 1874 and left her in 1876; and during that time they were in use, as I described.

18 Q. Please look at the model, Def't's Exhibit "Locomotive Cab Model No. 2," and state how the door or window at the front of that cab, its combination with the cab, and the mechanism for operating the door or window compares with the combination of cab, cab door or window, and operating mechanism which were in use on the locomotive of the Central railroad of New Jersey from 1874 to 1876, about which you have testified.

A. It is the same, with the exception that the rod which connects the slide with the door was round in the locomotive, about which I have testified.

19 Q. Was the locomotive on which you worked from 1874 to 1876 on the Central railroad of New Jersey the only one which, to your knowledge, had an inwardly-swinging hinged door at the front of the cab and operating mechanism similar to this model?

A. There were several more on the same road.

185 (Counsel for complainant object to all of the foregoing testimony of Thos. Lonergan which relates to the knowledge or use of gates provided with opening and closing mechanism prior to the date of the patent sued on upon the ground — such prior knowledge or use was not set up in the answer nor the names or residences of such person or persons who had known or used such mechanism or the place or places where it was used set forth and no statutory notice given thereof.)

(Counsel for defendant admits that the above objection is made in time.)

Cross-examination:

20 X Q. What does the little shelf like the piece which is arranged between the end of the boiler and the side of the cab, directly beneath the windows of the cab in the model, represent?

A. It is the running board.

21 X Q. Is not this little shelf-like piece used by the engineer for a seat?

A. No, sir.

22 X Q. Where does the engineer sit?

A. On a seat hinged to the side of the cab above that running board.

23 X Q. Did the boiler in this locomotive on the New Jersey Central R. R., of which you have been testifying, project back into the cab as does the boiler in this model?

A. Yes; in fact the boiler in that locomotive projected further inward than that in the model.

24 X Q. Was the slide and connecting rod for operating the cab door or window arranged up at the top of the cab, as shown in the model?

A. No; it was in the middle of the cab window frame.

25 X Q. What was the window or door to which the connecting rod was attached used for?

A. Ventilation.

186 26 X Q. There is no such window as that to which the connecting rod was attached on the locomotive on the New Jersey Central railroad, about which you have been testifying, represented in this model?

A. No, sir.

27 X Q. It is true, is it not, that in that locomotive there was a large door or window as represented in this model, and in this large door there was a small one that was used for ventilation, and the connecting rod and slide were attached to the small door and were used to open and close this small door and regulate its position?

A. Yes, sir.

28 X Q. And the big door which was used, as I understand, to allow the engineer or fireman to pass out of the cab onto the run board leading to the front of the engine was provided with a button or latch by which it was fastened closed when the little door was opened?

A. Yes, sir.

29 X Q. And the little door was never used and could not be used for the passage of the engineer or fireman?

A. No, sir.

30 X Q. Why, if you know, was this little door provided with a slide and connecting rod for opening and closing it instead of with a button or latch?

A. Because I could vary with the slide and make a stronger support to the middle of the window.

31 X Q. Was not the principal object of the slide and connecting rod to enable the engineer or fireman to fasten this little door in a partly-open position?

A. Yes, sir.

32 X Q. And if it had not been desirable to fasten this little door in a partly-open position would not a hook or latch or some equivalent fastening which would fasten the little door closed or fully opened have been just as good as the slide and connecting rod?

A. No, sir.

187 33 X Q. Please explain why.

A. I call the slide and rod an improvement, and that was why it was adopted.

34 X Q. And the improvement, as you understand it, was, was it not, that you could by means of this rod and slide fasten the little door in a partly-opened position?

A. Yes, sir.

35 X Q. And except for this improvement a hook or a latch would have been just as good?

A. Yes, sir.

36 X Q. State, as near as you can recollect, about the size of that little door.

A. About one foot square.

37 X Q. And it was located about the middle of the big door?

A. Yes, sir.

38 X Q. Then this model, Def't's Exhibit "Locomotive Car Model No. 2," does not correctly represent the locomotive upon which you worked, but only represents with substantial accuracy the mechanism used for opening and closing and for fastening in a partly-opened position the little door which was hinged in the middle of the big door?

A. It acts for both the large and small door.

39 X Q. Question 38 X Q. repeated.

A. No; it does not, but it represents the slide and rod for opening and varying the little door and large door. Of course, in cold weather we use the large door with that slide and in warm weather the small door.

Redirect examination by E. H. **Brown**:

41 Re-D. Q. Please explain how in cold weather you use the large door with the slide.

A. Just to open and close for use for the engineer or fireman to go in or out of the cab to the front of the engine. In cold 188 weather we closed and fastened the small door in the big door, and then we used the large door with the slide and rod.

42 Re-D. Q. During the cold weather of what years was this done, with your knowledge?

A. 1874 and 1875.

43 Re-D. Q. Did the large door swing inward or outwards in opening?

A. Inwards.

44 Re-D. Q. How did it compare with the door in Def't's Exhibit "Locomotive Cab Model No. 2?"

A. The door hung the same and the slide acted the same.

Recross-examination:

45 Re-X Q. As I understand from what you have said, the doors of this locomotive about which you have been testifying were arranged in the following manner, viz: There was a big door like the one shown in the model; in an opening in this big door there was hinged a small door, and the slide and rod were attached to the small door; the small door was provided with a button by which it could be fastened closed, and the big door was also provided with a button by which it could be fastened closed. Now, in hot weather

you fastened the big door closed by the button and used the rod and slide to open and close the little door and to fasten it in position partly open to let air in the cab. In cold weather you fastened the little door with its button in its closed position in the big door and used the rod and slide to open and close the big door. Am I right?

A. Yes, sir.

46 Re-X Q. Did you ever in cold weather have occasion to fasten the big door partly open to let air into the cab?

A. Yes, sir.

47 Re-X Q. And you used the rod and slide for this purpose?

189 A. When I wanted to keep it partly opened I had to do so.

48 Re-X Q. If you simply wanted to secure ventilation why did you not simply use the little door provided for that purpose?

A. We used either the large or small door, just as we liked.

49 Re-X Q. When you opened and closed the large door and did not desire to fasten it in a partly-opened position did you use the rod and slide to push it closed and pull it open, or did you open and close it as you would — an ordinary way?

A. I used the slide, but you could do it either way.

50 Re-X Q. The slide and rod did not possess any special advantage for this purpose over opening and closing the door in the ordinary way, did it?

A. Yes. When the door is shut the rod and slide keep it closed, and acted as a handle also to open it.

51 Re-X Q. Is that all the advantage?

A. That is all I can now see.

THOS. LONERGAN.

Sworn to and subscribed this 17th day of January, 1885.

[L. S.] JOHN W. KONVALINKA,
Notary Public, Kings County.

Certificate filed in New York county.

190 WILLIAM R. SHANNON, a witness examined on behalf of the defendant, being duly sworn, deposes and says as follows:

1 Q. What is your name, age, residence, and occupation?

A. William R. Shannon; 46 years; 1686 Third avenue, New York city, N. Y.; I am a car-builder. I have been employed by the elevated railroads in New York to trim their cars, and I have charge of trimming and fitting all the cars of said roads and do all the inside work on said cars that go through the Third-avenue shop.

2 Q. How long have you had that position?

A. Since May, 1879.

3 Q. Do you know anything about the use of the gates hinged to the corners of the bodies of the cars at the side of the platforms of any of the elevated railroads in this city?

A. Yes, sir; I know all the cars on all the elevated railroads in New York city.

4 Q. Referring to those cars of the elevated railroads which have had gates hinged to the corners of the car bodies — control the sides of the platforms, will you please state how those gates have been operated?

A. They have been operated by a man standing on both platforms of two adjacent cars and at the passage-way leading from one car to the other and unlatching the gates and then swinging the gates both back at once against the ends of the cars.

5 Q. How long have gates been so used and operated, to your knowledge, upon any of the cars of the elevated railroads in this city?

A. During the last six years, since November 6, 1878, when I first commenced work on the elevated railroads, I have had knowledge of them.

6 Q. Look at the model, "Defendant's Exhibit Model of Defendant's Car," and state if you know what that model represents.

A. It represents a portion of one class of cars which are in
191 use upon the elevated railroads in this city. It represents
the end of a car, the platform, the guard rail or end rail, the gate, and the gate-operating mechanism.

7 Q. Do you know how long cars have been in use upon the Manhattan Elevated railroad with gates and gate-operating mechanism like the gate and gate-operating mechanism shown in "Def't's Exhibit Model of Def't's Car?"

A. From about the first part of November, 1882.

(Counsel for complainant objects to all of the foregoing testimony of Mr. Shannon which relates to knowledge or use of gates provided with opening and closing mechanism prior to the date of the patent sued on, upon the ground that such prior knowledge or use was not set up in the answer, nor the names or residence of such person or persons who had known or used such mechanism, or the place or places where it was set forth, and no statutory notice given thereof.)

(Counsel for defendant admits that above objection is made in time.)

Cross-examination by counsel for complainant, subject to and reserving the above objection:

8 X Q. In those gates to which you have referred, which are hinged to the corners of the car bodies, is it possible for the attendant, standing in the passage-way leading from one car to another, to reach and unlatch both gates at once?

A. Yes, sir; it is; but there are some short men who have to unlatch the gates one at a time, and then they can open both together.

9 X Q. Is it not a fact that a man of ordinary height (say 5 feet 8 inches) can only reach both of the gates at once by leaning forward over the ends of the guard rails to such an extent as to make it a very uncomfortable and inconvenient operation?

A. No, I don't think so.

192 10 X Q. After he has opened the gates in this manner and
they have been swung around against the ends of the cars can the attendant close both gates at once?

A. No, sir.

11 X Q. He has to step onto one platform in order to reach one gate and then onto the other platform to reach the other, has he not?

A. Yes, sir.

12 X Q. And in the case of a short man he has to undergo the same operations to unlatch both gates?

A. Yes, sir.

13 X Q. In the case of those gates which are hinged to the guard rails at the corners of the car platforms, as shown in Defendant's Exhibit "Model of Def't's Car," it is necessary, is it not, when such gates are not provided with an opening and closing mechanism, for the attendant to step onto one platform to unlatch one gate and then onto the other platform to unlatch the other?

A. It is, to unlatch them.

14 X Q. And they have to be unlatched before they can be opened, have they not?

A. Yes, sir.

W. R. SHANNON.

Sworn to and subscribed before me this 17th day of January, 1885.

[L. S.] JOHN W. KONVALINKA,
Notary Public, Kings Co.

Certificate filed in N. Y. Co.

193 FRANK M. CAILLE, a witness examined on behalf of the defendant, being duly sworn, deposes and says as follows:

1 Q. What is your name, age, residence, and occupation?

A. Frank M. Caille; 41 years; New York city, N. Y.; mechanical draughtsman, in the employ of the Manhattan Railway Company.

2 Q. How long have you been draughtsman for that company?

A. I think about five years.

3 Q. Look at the model, "Defendant's Exhibit Model of Def't's Car," and state whether you ever made any drawings of the gate-operating mechanism illustrated there.

A. I have.

4 Q. When did you make such drawings?

A. Made a rough drawing about April, 1882, as near as I can fix the date. It was some little time previous to the time when I made the drawing of which "Defendant's Exhibit Drawings of Def't's Gate-Operating Mechanism" is a copy. The drawing last referred to, of which "Defendant's Exhibit Drawing of Def't's Gate-Operating Mechanism" is a copy, was made June 3d, 1882, by me.

5 Q. Please describe "Defendant's Exhibit Drawing of Def't's Gate-Operating Mechanism" with reference to the letters marked thereupon.

A. A is a bar to be attached to the front guard rail of the platform; B is a small slide moving upon this bar A; C is a connecting rod connecting the slide B to the gate which is to be operated; D is a connecting rod which connects the slide B with a lever, E, which is fulcrumed on the pivot G, extending from the bar A.

(Counsel for complainant object to all the foregoing testimony of Mr. Caille on the ground that it relates to the gate-operating 194 mechanism which is now set up as anticipating the invention and described and claimed in the patent sued on, which prior structure or drawings was not set up in the answer of the defendant in this case, or the names or residences of any person or persons who had knowledge of the same, or the place or places where the same was known or used, and no statutory notice given thereof.)

Counsel for defendant admits that the above objection was taken in time.

Counsel for complainant, subject to and reserving said objection, cross-examines the witness as follows:

5 X Q. Who, if you know, designed the gate-operating mechanism illustrated in the "Defendant's Exhibit Drawing of Defendant's Gate-Operating Mechanism?"

(Objected to by defendant's counsel as not warranted by the direct examination.)

A. The orders were given to me by Mr. Peeples to construct, an idea given of what was wanted, and the details were worked up and the drawings were made by me.

6 X Q. How full instructions did Mr. Peeples give you in regard to making these drawings? I mean how fully did he explain to you the construction of the mechanism which he wanted illustrated in in the drawings?

(Same objection.)

A. It is very difficult to answer the question, as ideas come to me in a crude way—sometimes by word of mouth and sometimes by sketch—and I have to work up what we term "details."

7 X Q. Did Mr. Peeples furnish you any sketches from which to work in making this drawing?

(Same objection.)

195 A. He did not, to the best of my recollection.

8 X Q. Do you recollect, and if so, what did he tell you he wanted made or how full were the instructions he gave you as to what he wanted made?

(Same objection.)

A. To the best of my recollection, he wanted a device, or latch, as he called it, that would secure those gates when closed, and I think he said that the locking mechanism must be out of the reach of the passengers, so that passengers standing on the station platform could not reach over and open the gates.

FRANK M. CAILLE.

Sworn to and subscribed before me this 17th day of Jan., 1885.
[L. S.] JOHN W. KONVALINKA,
Notary Public.

196 DEFENDANT'S EXHIBIT BROWN PATENT.

Specification forming part of Letters Patent No. 41676, dated Feb'y 23, 1864.

To all whom it may concern:

Be it known that I, William H. Brown, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful improvements in the mode of opening and closing iron and other blinds or shutters and the slats thereof; and I do hereby declare the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Fig. 1 represents a front view of one section of a blind in position, with the front central part of the casing removed to expose the lever by which the slats are opened and closed.

Fig. 2 represents a rear or back view of the same blind.

Fig. 3 represents a section on lines A B, Figs. 1 and 2.

Fig. 4 represents a section of a part of the blind on line C D, Fig. 1.

Fig. 5 represents a central section of the blind only on line E F, Fig. 1; and

Fig. 6 represents a top or plan view of the central supporting bar, C, with its spring for keeping the blind from rattling.

197 In the drawings, A A A A represent the wall of the building and B B B B the window frame.

A strong iron bar, C, is fastened to the outside of the building and across the centre of the window or thereabouts, as clearly indicated in the drawings.

Against the bottom of bar C is fitted to work the top of the rack bar *a*, which is securely fastened to the inside of the central part D of the blind E, which is provided with hinged slats *b b b* on its lower half, the same being connected on the inside by means of a connecting rod, *c*, whereby as said rod *c* is raised or depressed the slats *b* will be closed or opened as is usual in blinds having hinged slats.

The weight of the blind is sustained by two rollers *d d*, which revolve on bearings fastened to the central part D of the blind.

These rollers *d d* rest upon and run on top of the bar C, and are retained in proper position by a lip, *e*, from the blind, which projects over and down on the inside of the bar C, which should be so made and applied to the wall as to leave a space between its top flange or edge *f* and the wall or side of the building.

A spring, *h*, is fastened to the inside of the bar C, as indicated in Fig. 6, whereby when the blind is closed the lip *e* will bear against and compress the curved part *i* of spring *h*, which prevents rattling.

The same result is obtained when the blind is open by the part *j* or spring *h*.

Iron rods *k k*, fastened to the walls, serve to keep the top and bottom of the blind from rubbing against and marring the wall while being opened and closed.

The stationary shield E^1 prevents water from running in over the top of the blind, and at the same time serves to keep the blind in position.

The blinds may be made in two parts and each half slide in opposite directions, or the blind may be made whole so as to cover the entire window, just as the constructor may prefer.

198 The blind is opened and closed from the inside of the building by means of the small pinion or gear *m* taking into rack bar *a*, the former being fastened to the outer end of shaft *n*, which extends through the wall or window casing into the inside of the building, where it is provided with a ratchet wheel, *o*, and a handle, *p*.

Gear *n* is kept in position to act upon the rack bar *a* by means of a spring, *y*, placed between the rachet wheel *o* and the face *s* of the bearing tube F which supports shaft *u*.

It will thus be seen that a person upon the inside can open or close the blind in a very expeditious manner, and that, too, without opening the window.

After the blind has been closed by dropping pawl *t* upon the ratchet wheel *o* the blind is locked and cannot be opened from the outside.

Again, after the blind has been closed the slats *b* may be opened or closed as follows: The operator bears against shaft *u*, thereby forcing it outward, whereby its gear *n* will take into the vertical rack bar *u*, into a slot or notch in the side of which one end of lever G fits, while its other end is pivoted to the connecting rod *c*, to which all of the hinged slats to be operated are in turn hinged. Now, if gear *m* is revolved while in this position lever G will be operated upon, and consequently the slats can be either closed or opened, and as soon as the operation is performed and the pressure on shaft *n* removed spring *y* forces shaft *n* and its gear *m* back into proper position to open and close the blind.

The rack bar *u* is retained in proper position by means of a guide piece, *w*, fastened to the blind.

In the drawings the slats of only one-half of a section of a blind are represented as hinged, since they are all sufficient to illustrate the principle of my invention in relation thereto.

199 Having described my improvements, what I claim and desire to secure by letters patent is—

First. The combination, with a sliding blind, of the slats *b*, connecting rod *c*, lever G, rack bar *u*, and sliding shaft *u*, with its gear *m*, arranged and operating together, substantially as and for the purpose set forth.

Second. The combination, with a sliding blind, of lip *e*, spring *y*, ratchet wheel *o*, and pawl *t*, for the purposes stated.

WM. H. BROWN.

Witnesses:
ALLIN THAYER.
GEO. H. MILLER.

Ex'd: E. L. L., C. F.

200 Defendant's Exhibit Douglass Patent.

Specification forming part of Letters Patent No. 32512, dated June 11, 1861.

To all whom it may concern:

Be it known that I, Darwin De Forrest Douglass, of Springfield, in the county of Hampden and the State of Massachusetts, have invented a new and improved mode of hanging and operating window blinds; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in certain improvements in hanging and operating window blinds by which I am enabled to use blinds made lighter, and, being supported the entire width of the same, cannot sag or be blown and slammed by the wind, can be opened and closed from the inside of the room without opening the window, can be opened more or less, and finally held in such a position, giving the advantage of inside blinds.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Fig. 1 is an inside view, with the lower sash thrown up.
Fig. 2 is an outside view, with one blind open, the other closed.
Fig. 3 is a vertical cross-section.
Fig. 4 shows the slots in the guide bars to permit the passage of the inner flange of the blinds.

201 I construct the window and blinds in any of the known forms. The flat metallic guide bar A at the bottom of the window rests on the window sill, the sill being grooved to admit the lower edge of it. I do not confine myself to this precise form of guide bar; it may be made flat, round, square, or any other form. The staple B is driven into the window sill, over the bar A, at the center of the window, for the purpose of holding the said bar in its place, and also to form a stop to prevent the blind being moved past the center.

The said bar extends each side of the window the width of each blind for the purpose of guiding and supporting the blinds. Each end is secured to the house by a screw passing through a hole formed on each end into the side of the house.

The flat metallic guide bar C at the top of the window is made in the same form as the bar A. It is secured to the under side of the window cap D, the cap being grooved to admit the upper edge of it, by the staple B, and each end is secured to the house in the same manner as the bar A.

Both ends of the blinds are grooved in the form of a half circle corresponding with the diameter of the guide bars A and C for the purpose of forming guides for the blinds to move on the said bars. The flat metallic guide bars A and C are provided with slots at each end, in the short arm of the axle E, to permit the passage of the inner flange, F, of the groove on each end of the blinds in putting on and removing the blinds entirely from the windows.

The rack G is made of metal of sufficient length to extend across the width of the blind, and secured to the blind on the inside against the bar H, at or near the center of the blind. The pinion I is made of metal, is firmly secured to the shaft J, said shaft passing through both window casings and terminating inside of the room, with the knob K. The pinion I is placed just below the 202 rack G and meshing into it, forming a rack and pinion, for the purpose of moving the blinds.

By rotating the knob K the rack and pinion is actuated, opening and closing the blinds.

What I claim as my invention, and desire to secure by letters patent, is—

1st. The flat metallic guide bars A and C, made substantially in the manner described, and for the purpose specified.

2d. The rack and pinion G and I, or its equivalent, in combination with the guide bars A and C and blinds, for the purpose specified, and operating substantially in the manner described.

DARWIN DE FORREST DOUGLASS.

Witnesses:
JOHN M. STEBBINS.
JAMES C. HARRIS.

Ex'd: E. L. L., C. F.

203 *Surrebuttal.*

U. S. Circuit Court, Southern District of New York. In Equity.

JOSEPH ARON *vs.* MANHATTAN ELEVATED RAILWAY CO.

N. Y., *Oct.* 12*th*, 1885.

Met pursuant to annexed notice.

Present: E. H. Brown, counsel for defendant; Munson & Phillip, counsel for complainant.

It is agreed by counsel for defendant that counsel for complainant may reserve his objections until close of direct examination, and that such objections as may be made are taken in time.

Objection reserved.

Colonel F. K. HAIN, a witness examined on behalf of the defendant, being duly sworn, deposes and says as follows:

1 Q. What is your name, age, residence, and occupation?

A. F. K. Hain; 48 years of age; New York city, N. Y.; general manager of the elevated roads of New York city.

2 Q. Do you remember an interview which Joseph Aron and William W. Rosenfield had with you concerning a mechanism for operating gates applied to the platforms of elevated railway cars?

204 A. No; I do not; I believe they had an interview with me.

3 Q. Did they have more than one interview with you, so far as you know?

A. No, sir.

4 Q. Do you remember when that interview occurred?

A. I do not.

5 Q. Concerning that interview Joseph Aron has testified that you remarked, after having an explanation of the mechanism, "Well, that's no account." Did you see anything in the mechanism of practical utility, so far as you remember?

A. Well, if I made that remark I did not; I do not remember that it impressed me as of any value.

6 Q. Please look at the drawing of the Rosenfield patent, No. 288,494, which is the patent in suit, and state your opinion as to the practical utility of the gate-operating mechanism therein shown.

A. I think it would be objectionable for use on the cars of the elevated railroads. As the brakeman who operates this device stands in the middle of the cars the rods necessary to open the gates would cause him to fill up the passage-way between the cars and prevent the movement of passengers through during the busy hours of the day. A train approaching a station with gates closed, the passengers could push them open, as, in my opinion, this is not a lock, while the device we have in use is an absolute lock.

7 Q. I refer you to question and answer 6 of the deposition made by Senator John J. Kiernan is this case. What was it of which you had knowledge upon the Western roads?

A. Well, if I made that remark I had in mind the principle in use on locomotive cab doors.

8 Q. Please describe that.

A. A rod connected at one end to the cab door to draw it in or throw it out of the cab, the other end connected with a cross-head, which can be fixed in any position to a guide bar by means of a set screw.

205 9 Q. Please look at Defendant's Exhibit "Locomotive Cab Model No. 2" and state how that compares with what you refer to in your last answer in respect to the door at the front of the cab and the mechanism for operating such door.

A. It is about the principle. The character of the mechanism, door, &c., are the same.

10 Q. When did you first know of such mechanism in conjunction with cab doors of locomotives?

A. Twenty years ago.

11 Q. Did any interview which Joseph Aron and William W. Rosenfield had with you lead in any way to the adoption for the

cars of the elevated railroads of mechanism whereby the platform gates could be operated from the passage-way in the guard railing?

A. No, sir.

12 Q. Did it have anything whatever to do with the adoption of the mechanism for operating the platform gates, consisting of a bell-crank or elbow lever and rod, which is now in use upon the cars of the elevated railroads?

A. No, sir.

13 Q. Did you make use in any way of any idea which may have been submitted or presented to you by Joseph Aron or William W. Rosenfield?

A. No, sir.

(Counsel for complainant objects to ths whole of the foregoing deposition on the ground that it is taken out of time, and upon the further ground that it is not proper surrebuttal of the rebutting testimony taken on the part of the complainant, and upon the further ground that the defendant has no right to take surrebutting testimony; that its proper course, if improper testimony was put in by complainant in rebuttal, was to move to strike out said testimony. These objections, while applying to the whole deposition, are specially insisted on and urged to questions 6 to 10, inclusive, and 206 notice is hereby given that at the hearing of the cause a motion will be made to strike out the deposition.)

Cross-examination *de bene esse* without waiving objections:

14 X Q. Please explain a little more fully what you mean in your 6th answer by the expression "the rods necessary to open the gate would cause him to fill up the passage-way between the cars."

A. If I understand the drawings of the Rosenfield patent correctly the rods for operating the gates would be drawn out towards the center of the car platform against the brakeman, who would be pressed towards the center of the platform, and thereby obstruct the passage-way.

15 X Q. Did this objection occur to you at the time Mr. Aron and Mr. Rosenfield called on you and first explained the invention to you?

A. I don't remember ever having seen the model until I saw it at Mr. Kiernan's office some weeks ago, when Senator Kiernan's testimony was being taken in the case.

16 X Q. Have you any recollection of having had a conversation with Senator John J. Kiernan or of seeing in Senator Kiernan's office a small model of the Rosenfield invention, or of having any conversation with Senator Kiernan, as he has stated in his deposition, as has been just read to you?

A. I do not remember a conversation with Senator Kiernan on that subject, and the only time I remember seeing the model was in Senator Kiernan's office, when his deposition was being taken in this case, some weeks ago.

F. K. HAIN.

[illegible]

A. No, sir. [illegible]

17 Q. [illegible] with the [illegible] the mechanism [illegible] the platform gates [illegible] the current [illegible]

A. No, sir.

18 Q. Did you [illegible]

[illegible]

[illegible]

16 X Q. [illegible]

A. [illegible]

19 X Q. Did [illegible] Mr. Rosamond [illegible]

A. I don't [illegible] of Mr. Harrison [illegible]

20 X Q. [illegible] with [illegible]

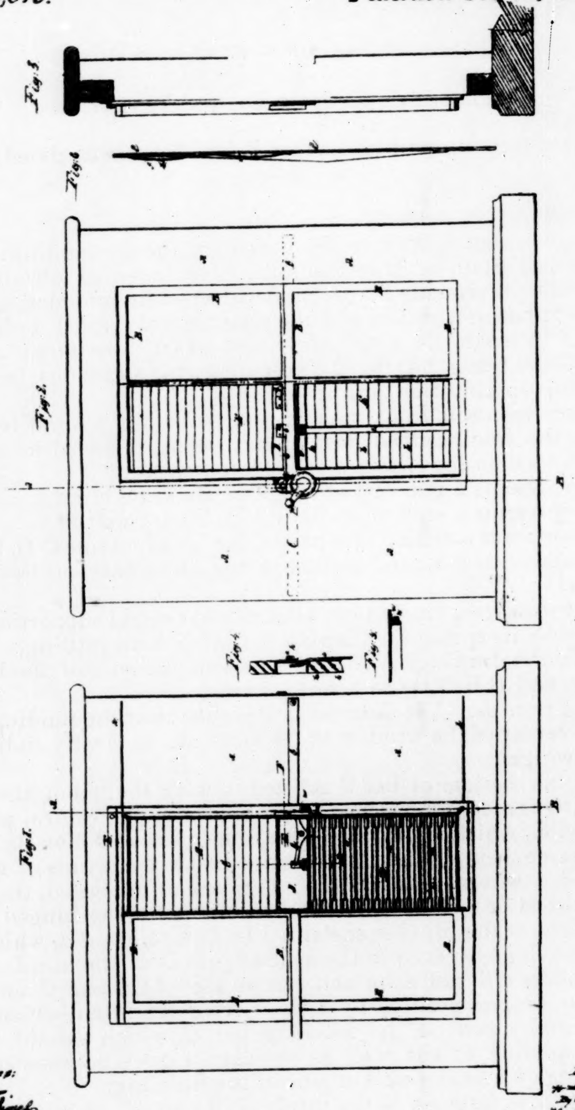
A. [illegible]

No. 304
Aion
N. Ry Co } p. 204

W. H Brown,

Shutter Worker.

No. 41,676. Patented Feb. 23, 1864.



Witnesses:
F. Cohen
Julius Hirsch

Inventor
Wm H. Brown
By his Attorney
Knight Bros

Sworn to and subscribed before me this 12th day of Oct., 1885.

JOHN W. KONVALINKA,
Notary Public, Kings Co.

Cert. filed in N. Y.

(Here follows diagram marked page 207.)

208 DEFENDANT'S EXHIBIT BROWN PATENT.

Specification forming part of Letters Patent No. 41676, dated Feb'y 23, 1864.

To all whom it may concern:

Be it known that I, William H. Brown, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful improvements in the mode of opening and closing iron and other blinds or shutters and the slats thereof; and I do hereby declare the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Fig. 1 represents a front view of one section of a blind in position, with the front central part of the casing removed to expose the lever by which the slats are opened and closed.

Fig. 2 represents a rear or back view of the same blind.

Fig. 3 represents a section on lines A B, Figs. 1 and 2.

Fig 4 represents a section of a part of the blind on line C D, Fig. 1.

Fig. 5 represents a central section of the blind only, on line E F, Fig. 1; and

Fig. 6 represents a top or plan view of the central supporting bar C, with its spring for keeping the blind from rattling.

209 In the drawings A A A A represent the wall of the building, and B B B B the window frame.

A strong iron bar, C, is fastened to the outside of the buiding and across the center of the window or thereabouts, as clearly indicated in the drawings.

Against the bottom of bar C is fitted to work the top of the rack bar *a*, which is securely fastened to the inside of the central part D of the blind E, which is provided with hinged slats *b b b* on its lower half, the same being connected on the inside by means of a connecting rod, *c*, whereby, as said rod *c* is raised or depressed, the slats *b* will be closed or opened as is usual in blinds having hinged slats.

The weight of the blind is sustained by two rollers *d d*, which revolve on bearings fastened to the central part D of the blind.

These rollers *d d* rest upon and run on top of the bar C, and are retained in proper position by a lip, *e*, from the blind, which projects over and down on the inside of bar C, which should be so made and applied to the wall as to leave a space between its top flange or edge *f* and the wall or side of the building.

A spring, *h*, is fastened to the inside of the bar C, as indicated in Fig. 6, whereby, when the blind is closed, the lip *e* will bear against and compress the curved part *i* of spring *h*, which prevents rattling. The same result is obtained when the blind is open by the part *j* of spring *h*.

Iron rods *k k*, fastened to the walls, serve to keep the top and bottom of the blind from rubbing against and marring the wall while being opened and closed.

The stationary shield E^1 prevents water from running in over the top of the blind, and at the same time serves to keep the blind in position.

The blinds may be made in two parts and each half slide in opposite directions, or the blind may be made whole, so as to cover the entire window, just as the constructer may prefer.

210 The blind is opened and closed from the inside of the building by means of the small pinion or gear *m* taking into rack bar *a*, the former being fastened to the outer end of shaft *n*, which extends through the wall or window casing into the inside of the building, where it is provided with a rachet wheel, *o*, and a handle, *p*.

Gear *n* is kept in position to act upon the rack bar *a* by means of a spring, *y*, placed between the rachet wheel *o* and the face *s* of the bearing tube F, which supports shaft *u*.

It will thus be seen that a person upon the inside can open or close the blind in a very expeditious manner, and that, too, without opening the window.

After the blind has been closed, by dropping pawl *t* upon the rachet wheel *o* the blind is locked, and cannot be opened from the outside.

Again, after the blind has been closed, the slats *b* may be opened or closed as follows: The operator bears against shaft *u*, thereby forcing it outward, whereby its gear *n* will take into the vertical rack bar *u*, into a slot or notch in the side of which one end of lever G fits, while its other end is pivoted to the connecting rod *c*, to which all of the hinged slats to be operated are in turn hinged. Now, if gear *m* is revolved while in this position lever G will be operated upon, and consequently the slats can be either closed or opened, and as soon as the operation is performed and the pressure on shaft *n* removed, spring *y* forces shaft *n* and its gear *m* back into proper position to open and close the blind.

The rack bar *u* is retained in proper position by means of a guide piece, *w*, fastened to the blind.

In the drawings the slats of only one-half of a section of a blind are represented as hinged, since they are all sufficient to illustrate the principle of my invention in relation thereto.

211 Having described my improvements, what I claim and desire to secure by letters patent is—

First. The combination, with a sliding blind, of the slats *b*, connecting rod *c*, lever G, rack bar *u*, and sliding shaft *n*, with its gear *m*, arranged and operating together, substantially as and for the purpose set forth.

ting. The same result is obtained when the blind is [illegible] part y of spring b.

Iron rods x x, fastened to the walls, serve to keep the top and bottom of the blind from rubbing against and marring the wall while being opened and closed.

The stationary shield P prevents water from running in over the top of the blind, and at the same time serves to keep the blind in position.

The blinds may be made in two parts and each half slide in opposite directions, or the blind may be made whole, so as to cover the entire window, just as the constructor may prefer.

210 The blind is opened and closed from the inside of the building by means of the small pinion or gear m taking into rack bar a, the former being fastened to the outer end of shaft b, which extends through the wall or window casing into the inside of the building, where it is provided with a crank wheel c and a [illegible]

Gear m is kept in position in and upon the rack bar a by means of a spring z, placed between the crank wheel c and the end of the bearing tube E, which supports shaft b.

It will thus be seen that a person, from the inside, can open or close the blind in a very expeditious manner and [illegible] opening the window.

After the blind has been closed, by dropping pawl r into the ratchet wheel o the blind is locked, and cannot be opened from the outside.

Again, after the blind has been closed, the slats A may be opened or closed, as follows: The operator, pressing against wheel c, thereby moving it outward, whereby gear m will take into the rack bar u, into a slot or notch in the side of which one end of lever G fits, while its other end is pivoted to the connecting rod n, to which all of the hinged slats in the partition k are hinged. Now if gear m is turned while in this position, lever G will be operated upon, and consequently the slats can be either closed or opened, and as soon as the operation is performed and the pressure on wheel c is removed, spring z forces shaft b and its gear m back into position to open and close the blind.

The rack bar u is retained in proper position by means of a guide piece, w, fastened to the blind.

In the drawings the slats of only one half of a section of the blind are represented as hinged, since they are all sufficient to illustrate the principles of my invention in relation thereto.

211 Having described my improvements, what I claim, and desire to secure by letters patent, is—

First. The combination, with a sliding blind of the slats, connecting rod n, lever G, rack bar u, and sliding shaft b, with its gear m, arranged and operating together, substantially as and for the purpose set forth.

D. De F. Douglass,

Shutter Worker.

No 32,512. Patented June 11, 1861.

No. 304 }
Aron } p. 212
M.Ry C. }

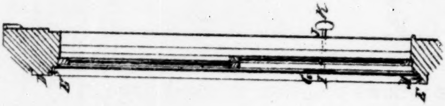


Fig: 3.

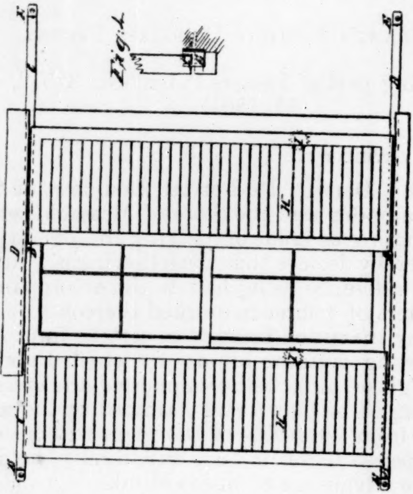


Fig: 4.

Fig: 2.

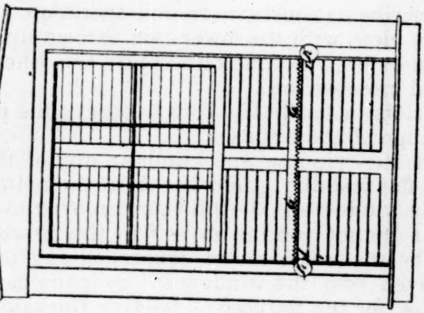


Fig: 1.

Witnesses
Jh. Mill Sutton
James C Warris

Inventor
D. De Forrest Douglass.

Second. The combination, with a sliding blind, of the lip *e*, spring *y*, rachet wheel *o*, and pawl *t*, for the purposes stated.

WM. H. BROWN.

Witnesses:
ALLIN THAYER.
GEO. H. MILLER.

Ex'd: E. L. L., C. F.

(Here follows diagram marked page 212.)

213 DEFENDANT'S EXHIBIT DOUGLASS PATENT.

Specifications forming part of Letters Patent No. 32512, dated June 11, 1861.

To all whom it may concern:

Be it known that I, Darwin De Forrest Douglass, of Springfield, in the county of Hampden and the State of Massachusetts, have invented a new and improved mode of hanging and operating window blinds; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in certain improvements in hanging and operating window blinds, by which I am enabled to use blinds made lighter, and, being supported the entire width of the same, cannot sag or be blown and slammed by the wind; can be opened and closed from the inside of the room without opening the window; can be opened more or less, and, finally, held in such a position, giving the advantage of inside blinds.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

Fig. 1 is an inside view, with the lower sash thrown up.

Fig. 2 is an outside view, with one blind open, the other closed.

Fig. 3 is a vertical cross-section.

Fig. 4 shows the slots in the guide bars to permit the passage of the inner flange of the blinds.

214 I construct the window and blinds in any of the known forms. The flat metallic guide bar A, at the bottom of the window, rests on the window sill, the sill being grooved to admit the lower edge of it. I do not confine myself to this precise form of guide bar; it may be made flat, round, square, or any other form. The staple B is driven into the window sill over the bar A at the center of the window, for the purpose of holding the said bar in its place, and also to form a stop to prevent the blind being moved past the center.

The said bar extends each side of the window the width of each blind for the purpose of guiding and supporting the blinds. Each end is secured to the house by a screw passing through a hole formed on each end into the side of the house.

The flat metallic guide bar C, at the top of the window, is made in the same form as the bar A. It is secured to the under side of the window cap D, the cap being grooved to admit the upper edge of it by the staple B, and each end is secured to the house in the same manner as the bar A.

Both ends of the blinds are grooved in the form of a half circle, corresponding with the diameter of the guide bars A and C, for the purpose of forming guides for the blinds to move on the said bars. The flat metallic guide bars A and C are provided with slots at each end in the short arm of the axle E to permit the passage of the inner flange F of the groove on each end of the blinds, in putting on and removing the blinds entirely from the windows.

The rack G is made of metal, of sufficient length to extend across the width of the blind, and secured to the blind on the inside against the bar H, at or near the center of the blind. The pinion I is made of metal, is firmly secured to the shaft J, said shaft passing through
both window casings and terminating inside of the room, with
215 the knob K. The pinion I is placed just below the rack G and
meshing into it, forming a rack and pinion for the purpose of moving the blinds.

By rotating the knob K the rack and pinion is actuated, opening and closing the blinds.

What I claim as my invention and desire to secure by letters patent is—

1st. The flat metallic guide bars A and C, made substantially in the manner described, and for the purpose specified.

2d. The rack and pinion G and I, or its equivalent, in combination with the guide bars A and C and blinds, for the purpose specified, and operating substantially in the manner described.

DARWIN DE FORREST DOUGLASS.

Witnesses:
JOHN M. STEBBINS.
JAMES C. HARRIS.

Ex'd: E. L. L., C. F.

(Here follow diagrams marked pp. 216 & 217.)

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218 UNITED STATES PATENT OFFICE.

THOMAS CASTOR, of Philadelphia, Pennsylvania.

Improvement for Opening Railroad-Car Doors.

Specification forming part of Letters Patent No. 32681, dated July 2, 1861.

To all whom it may concern:

Be it known that I, Thomas Castor, of Philadelphia, State of Pennsylvania, have made certain new and useful improvements in the construction of city passenger-railway cars; and I do hereby

216

T. Castor. Sheet 1. 2 Sheets.

Car Door

No 1,677 Patented Jul. 2, 1861.

32,681.

No. 304
Arow
v
N.R.y.Co. } p. 216

Fig. 1

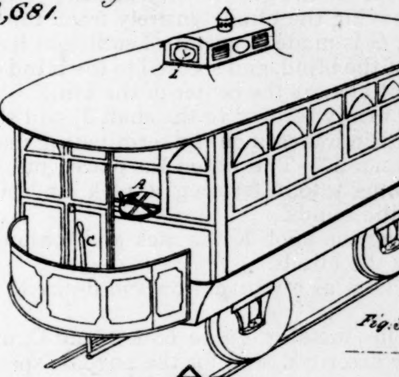


Fig. 3.

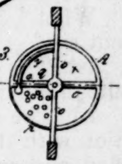
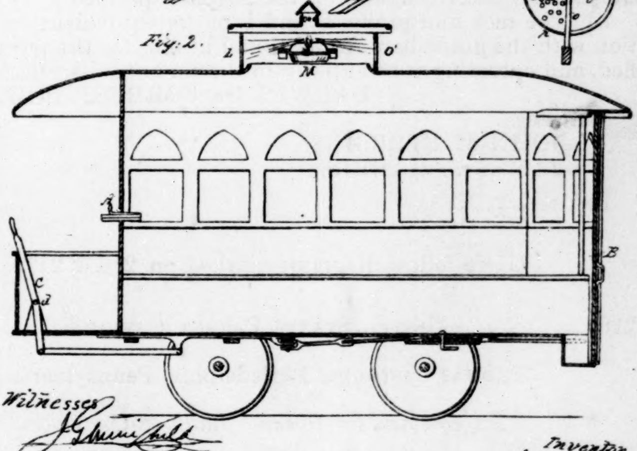


Fig. 2.



Witnesses

F. D. Boquet

Inventor

Thos Castor

217

T. Castor. Sheet 2, 2 Sheets.

Car Door.

No. 1,677. Patented Jul. 2, 1861.

32,681.

No 304.
Anon Mfg Co } p. 217

Fig: 4.

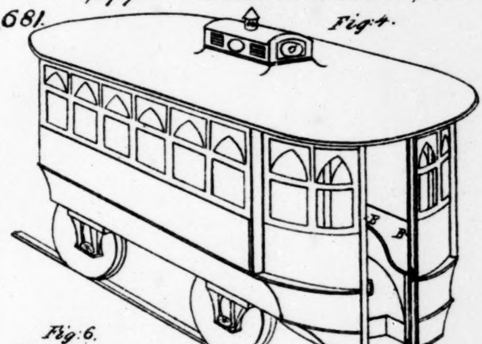
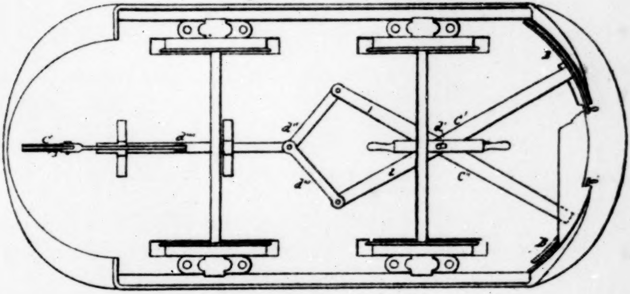


Fig: 6.

Fig: 5.



Witnesses

J. Elmer Child

F. D. Baquet

Fig: 7.

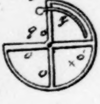
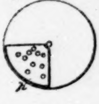


Fig: 8.



Inventor

Thos Castor

declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my city passenger-car, showing the front platform. Fig. 2 is a longitudinal section of my car. Figs. 3, 6, 7, and 8 are detached views of the money-box. Fig. 4 is a perspective view of the car, showing the rear end of the car. Fig. 5 is a plan of the bottom of the car, showing one mode of connecting the sliding doors B B and the lever C on the front platform.

The nature of my invention consists in so arranging double sliding doors at the rear of the car that they may be under the complete control of the driver, and thus dispense with the services of a conductor.

It has been a great object with city passenger-railway companies to dispense with the services of the conductor and place the entire control of the car under the charge of the driver. To accomplish this successfully, it is of great importance that the doors of the car should be under the control of the driver. To accomplish this, I employ double sliding doors B B. As these doors are necessarily narrow, I extend guide-arms from the side of the doors, thus making them move more steadily upon their ends. The drawings represent the end of the car as circular. Upon the front platform is a lever, C, moving upon a fulcrum, *d′*. The lower end of this lever is connected by a series of proper levers with the sliding doors B B, by means of which the doors may be opened and shut. One end of the levers C and C″ are connected with the door and move upon a common fulcrum, *d′*. The other ends are connected by rods *d″ d‴* with the rod *d⁗*, which is attached to the lower end of the lever C.

The mode of opening and closing the doors is as follows: By moving the handle of the lever C toward the body of the car the ends 1 and 2 of the levers C′ and C″ are drawn together by means of the rods *d⁗*, *d″*, and *d‴*, and by means of these levers C′ and C″ the doors are closed. The reverse operation will open the doors. The doors will slide more readily when the end is circular; but this is not essential. If a square end is used, the levers C′ and C″ should be connected with the doors by means of a short rod. The lever C, upon the front platform, may be connected with the doors by any known combination of levers which will give the desired motion.

The steps of the car may be made inside of the car, and the door, being extended down, will cover them, thus preventing persons getting in and out of cars without the knowledge of the driver, and many accidents will thus be prevented.

Having thus described my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the lever C upon the front of the car and the double sliding doors B B, when connected by a suitable combination of levers to open and close the doors, substantially as herein described.

THOS. CASTOR.

Witnesses:
J. EDWIN CHILD.
T. D. BAGNET.

(Here follows diagram marked p. 219.)

220 UNITED STATES PATENT OFFICE.

DANIEL KIDDER, of Franklin, New Hampshire.

Letters Patent No. 91026, dated June 8, 1869.

Improved Shutter-Worker.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern:

Be it known that I, Daniel Kidder, of Franklin, in the county of Merrimack, and State of New Hampshire, have invented a new and useful improvement in hanging window-blinds; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The figure is a view of a pair of window-blinds, to which my improvement has been attached.

My invention has for its object to improve the manner of hanging and operating window-blinds, so as to make them safer and more conveniently operated than the blinds hung and operated in the ordinary manner; and

It consists in the means for hanging and operating the blinds, as hereinafter more fully described.

A represents the side of the building;

B is the window-frame; and C are the blinds.

To the lower ends of the blinds C are attached ears D, through which passes a rod, E, attached to and supported by three brackets F, the end ones being attached to the wall of the building, and the middle one to the centre of the window-sill, the rod E being made of such a length that the blinds C may be slid along it away from before the window.

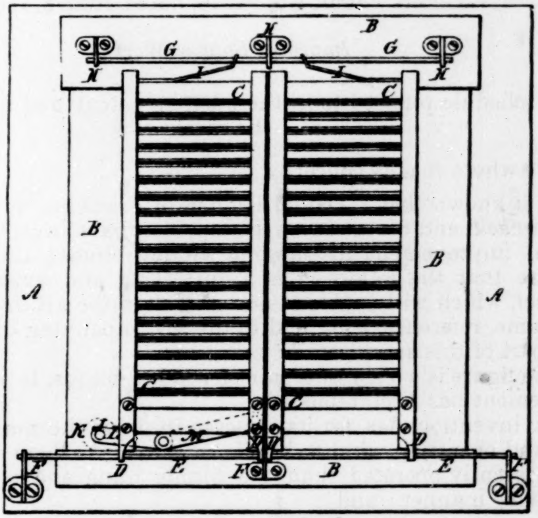
Above the upper ends of the blinds C is placed another rod, G, attached to and supported by brackets H, secured to the window-frame.

I are springs, the lower ends of which are secured to the upper edges of the blinds C, and the upper ends of which have holes formed through them, through which passes the rod G. This construction

D. Kidder,

Shutter Worker.

No. 91,026. Patented June 8. 1869.



No 304
Aron v. N.Y. Ry. Co. } p. 219

Witnesses
John F. Brooks
C. Greene

Inventor
D Kidder
per Munn & Co
Attorneys

Madison & McLaughlin,

Street Car.

No 93322. Patented Aug 3 1869

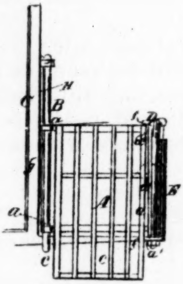


Figure 1.

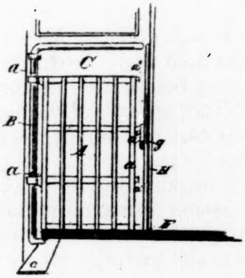


Figure 3.

No 304.
Aron
v.
M Ry Co. } p. 221

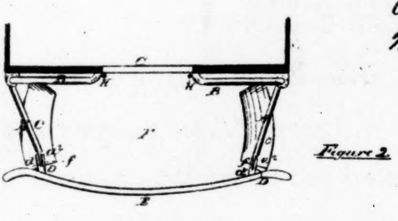


Figure 2.

Witnesses:

William W Hirthel

Robert Burns

Inventors:

John Madison Hugh McLaughlin

by their attorneys

and arrangement of the springs I holds the blinds securely down upon the rod E, and at the same time, prevents the upper ends of the blinds from becoming detached, and allowing the blinds to fall down and be broken.

J is a shaft passing through the lower part of the sides of the window-frame B, and to the inner end of which is attached a knob, K, as shown in dotted lines in the figure, which said knob may also serve as a curtain-knob.

To the outer end of the shaft J is attached one end of an arm, L, to the other end of which is pivoted one end of a bar, M, the other end of which is pivoted to the lower part of the blind C, near its forward edge, as shown in the drawing, so that by revolving the shaft J, by means of the knob K, the blind C may be slid back and forward.

The crank-arm L and bar M are made of such a length, that when the blind is pushed fully forward, the joint between the arm L and bar M may drop below the horizontal line, and thus lock the blind shut. The blind, when fully open, is locked in the same way, so that the blinds can neither be opened nor closed without operating the said shaft J.

I claim as new, and desire to secure by letters patent—

The combination and arrangement of the shaft J, arm L, and pivoted bar M, with the blind C, substantially as herein shown and described, and for the purpose set forth.

DANIEL KIDDER.

Witnesses:
WALTER AIKEN.
221 PARKER C. HANCOCK.

(Here follows diagram marked p. 221.)

222 UNITED STATES PATENT OFFICE.

JOHN F. MADISON and HENRY McLAUGHLIN, of St. Louis, Missouri.

Improvement in Street-Cars.

Specification forming part of Letters Patent No. 93322, dated August 3, 1869.

To all whom it may concern:

Be it known that we, John F. Madison and Henry McLaughlin, of St. Louis, in the county of St. Louis and State of Missouri, have made certain new and useful improvements in gates for street-cars and similar vehicles; and we do hereby declare that the following is a full and true description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to the gates or doors to be used on the platforms of street-cars and similar vehicles, and, in the usual application of said invention, the same acts to prevent ingress of passengers at the forward steps and platform, in order to prevent injury to which persons using said steps and platform may be liable.

Said invention is in the arrangement for supporting the gate, so as to exclude passengers from stepping upon the platform or the steps leading thereto, and at the same time being so arranged that said gates may be readily opened and swung back, and leave a free passage when the platform is intended for use as a passage.

To enable those herein skilled to make and use our said invention, we will now more fully describe the same, referring to the accompanying figures 1 and 2 as elevation and plan, respectively, of the gate closed, and to Fig. 3 as an elevation showing the gate swung open.

We form the grate A of iron or other substantial material, and hinge the same by the loops *a* to the side rail, B, arranged on the car-body C. Said loops *a* may slide up or down upon the rail B, in accordance with the movement given to the gate A. When said gate is closed, as in Figs. 1 and 2, the same passes down to the edge of the step *c*, thus preventing persons from obtaining a foothold, and effectually barring all entrance. In said position the forward edge of the gate rests, by its side prongs, a', against the rod D, attached to the dash-board E and the platform F. To prevent the gate from being pressed back, the end rail, *a*, of the same presses against the part *f* of the platform, and the highest prong, a^2, engages in the kerf *d* of the rod D. By the curved form of the top of the rod D, the engagement of the prong a^2 in the kerf *d* serves also to sustain the weight of the gate in whole or in part. By raising the gate vertically, it is disengaged from said closed position, and when the lower end thereof clears the platform F it may be swung back, and, resting against the front side of the car-body, is sustained and held in place by the catch *g*, into which one of the prongs, a', drops.

In order that the inner edge of the grate shall not obstruct or project, to cause discomfort or damage to the clothes of passengers in passing, we arrange the guard-rail H, shielding the projections a' a^2.

Having thus fully described our said invention, what we claim is—

1. The gate A, its loops *a*, the rail B, the prongs a' a^2, and the rod D, with its kerf *d*, when arranged with the platform F and dashboard E, substantially as set forth.

2. The gate A, its loops *a*, the rail B, the prong a', and catch *g*, and guard H, all combined and arranged substantially as set forth.

In witness of said invention we have hereunto set our hands in presence of witnesses.

JOHN F. MADISON.
HENRY McLAUGHLIN.

Witnesses:
WILLIAM W. HERTHEL.
ROBERT BURNS.

at the forward ends each platform [illegible] to prevent [illegible] which persons being [illegible] and [illegible] may be [illegible].

Said inventions in the arrangement of supporting the gate so as to exclude passengers from stepping upon the platform or [illegible] [illegible] [illegible], and at the same time being so arranged that said gates may be readily opened and swung back, and leave a [illegible] [illegible] when the platform is intended for use as a passage.

To enable those herein skilled to make and use our said invention, we will now more fully describe the same, referring to the accompanying figures 1 and 2 as elevation and plan, representing the gate closed, and to Fig. 3 as a [illegible] showing the gate open.

We form the gate A of iron or other substantial material and hinge the same by the hinges to the side-rail, B, arranged [illegible] car body [illegible]. Said hinges [illegible] slide up or down upon the [illegible] in accordance with the movements given to the gate A. When the gate is closed, as in Figs. 1 and 2, the prongs pass down to the [illegible] [illegible], thus preventing persons from obtaining a [illegible] and effectually barring all entrance. The [illegible] of the gate rests by its [illegible], against the [illegible] to the step-board E and the platform F. To prevent the gate from being pressed back, the side-rail [illegible] [illegible] part of the platform [illegible] [illegible] [illegible] of the rod [illegible]. By the [illegible] of [illegible] of the hinges [illegible] [illegible] [illegible] height of the gate [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] and [illegible] [illegible] of [illegible] the platform [illegible] swung back [illegible] [illegible] [illegible] of the car body [illegible] and [illegible] space by [illegible] which [illegible] [illegible] [illegible].

In order that the [illegible] edge of the gate shall not [illegible] project to cause discomfort or damage to the clothes of passengers in passing, we arrange the guard-rail H, shielding the [illegible] [illegible].

Having thus fully described our said invention, what we claim is—

1. The gate A, its hinges, the rail B, the prongs [illegible], and [illegible] D, with the [illegible] when arranged with the platform F and step-board E substantially as set forth.

2. The gate A, its hinges, the rail B, the prongs [illegible], and [illegible] and guard H, all combined and arranged substantially as set forth.

In witness of said invention we have hereunto set our hands in presence of witnesses.

JOHN P. [illegible]
HENRY [illegible]

Witnesses:

WILLIAM [illegible],
ROBERT [illegible].

223 [Coat of arms.]

A. D. 1872, 27th May. No. 1602.

Specification of Samuel Smith. Opening and Shutting Carriage Doors.

224 [Coat of arms.]

A. D. 1872, 27th May. No. 1602.

Opening and Shutting Carriage Doors.

Letters patent to Samuel Smith, of Halesworth, in the county of Suffolk, for the invention of "improvements in the mode of opening and shutting doors of vehicles and in apparatus therefor, which improvements are more particularly applicable to common road carriages."

Sealed the 15th November, 1872, and dated the 27th May, 1872.

Provisional specification left by the said Samuel Smith, at the office of the commissioners of patents, with his petition, on the 27th May, 1872.

I, Samuel Smith, of Halesworth, in the county of Suffolk, do hereby declare the nature of the said invention for "improvements in the mode of opening and shutting doors of vehicles and in apparatus therefor, which improvements are more particularly applicable to common road carriages," to be as follows:

The improvements consist in making suitable communication between the doors or fasteners thereof of common road carriages and the driving seat or seats of such carriages for the purpose of enabling the driver or occupant of the driving seat to open or shut the said doors without descending from the driving seat.

The improvements may also be applied to railway carriages, and may be performed by applying various cords, wires, or rods 225 acting by means of convenient pulleys and attached or communicating with locks, bolts, springs, or fastenings on or in the door or doors and furnished with convenient handle or handles, lever or levers, situated at or near the front or driving seat, or in the case of railway carriages in or near the guard's van, so that the occupant thereof may by pulling, pushing, lifting, or pressing, or by other suitable means move the handle or handles aforesaid and cause the cords, wires, or rods to open or shut the door or doors of the said carriages.

The accompanying drawing will serve further to illustrate the invention and a convenient mode of carrying the same into effect.

(Here follow drawings marked pp. 226 & 227.)

a is the handle made with a joint at *b* and hung on a pin at *c*, resting on a plate at *d*. *e* is the cord for opening the door, and is attached to the handle *a* at *f*, and runs over convenient pulleys round the roof, and is attached to the lever *g* at the point *h*. The lever *g* is hung on a pin or joint, *i*, and has the needle *j* attached at the joint *k*. Inside the door is the needle *l*, connected at *m* with the shaft *n*, working on the pin *o*, having the plate *p* attached at *q*, which runs to the self-acting slam lock *r*, and is attached to the bolt of the lock at *s*. The handle *a*, being lifted up and working on the pin *c*, draws the cord round the pulleys and raises the lever *g*, which forces out the needle *j*. This needle strikes another needle, *l*, which moves the shaft *n*, and by means of the plate *p* draws back the bolt of the lock *r*, and the door instantly opens. *t* is the spring of the slam lock. *u* is the spring to force the shaft *n* to its proper position when the door is open or shut, and *v* is the spring to keep the lever *g* in its proper place when the door is open or shut. *w* is the cord, attached to the handle *a* at *x*, for shutting the door, running round the roof parallel with the cord *e* and attached to the door at *y*. By moving the handle *a* forward, which will then work upon the joint *b*, the cord will shut the door and the spring lock *r* fastens it.

Specification in pursuance of the conditions of the letters patent filed by the said Samuel Smith in the Great Seal Patent Office on the 26th November, 1872.

To all to whom these presents shall come I, Samuel Smith, of Halesworth, in the county of Suffolk, send greeting:

228 Whereas Her Most Excellent Majesty Queen Victoria, by her letters patent bearing date the twenty-seventh day of May, in the year of our Lord one thousand eight hundred and seventy-two, in the thirty-fourth year of her reign, did, for herself, her heirs and successors, give and grant unto me, the said Samuel Smith, her special licence that I, the said Samuel Smith, my executors, administrators, and assigns, or such others as I, the said Samuel Smith, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an invention for "improvements in the mode of opening and shutting doors of vehicles and in apparatus therefor, which improvements are more particularly applicable to common road carriages," upon the condition (amongst others) that I, the said Samuel Smith, my executors or administrators, by an instrument in writing under my or their or one of their hands and seals, should particularly describe and ascertain the nature of the said invention and in what manner the same was to be performed and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said letters patent:

Now know ye that I, the said Samuel Smith, do hereby declare the nature of my said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:

The improvements consist in making suitable communication between the doors or fasteners thereof of common road carriages and round the rod, and in connection with [illegible] at the [illegible] severally being [illegible] by the [illegible] the joint k. Inside the door is the needle l, connected to a wire, or shaft m, working in the [illegible] having the [illegible] attached, which [illegible] the bell [illegible] of the lock at s. The handle u being fitted [illegible] guard, [illegible] round the [illegible] and [illegible] forces out the needle l. The needle strikes another needle [illegible] moves the shaft w and by means of the gate p draws [illegible] of the lock r, and the door instantly opens. [illegible] main lock [illegible] the spindle [illegible] when the door is open or shut, a [illegible] spring to keep [illegible] in its proper place when the door is open or shut. [illegible] attached to the handle u [illegible], for shutting the door [illegible] the door parallel with the said [illegible] attached to the [illegible] moving the handle u [illegible] which will then work upon [illegible] b, the door will shut [illegible] and the spring locks [illegible].

Specification in pursuance of the conditions of the letters patent filed by the said Samuel Smith in the Great Seal Patent Office on the 3rd November, 1872.

To all to whom these presents shall come, I, Samuel Smith, of [illegible], in the county of [illegible], send greeting.

328. Whereas Her Most Excellent Majesty Queen Victoria, by her Letters patent bearing date the [illegible] day of May, in the year of our Lord one thousand eight hundred and seventy-two, in the thirty-fifth year of Her reign, did, for herself, her heirs and successors, give and grant unto me, the said Samuel Smith, her special licence that I, the said Samuel Smith, my executors, administrators, and assigns, or such of them as I, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an invention for "Improvements in the mode of opening and shutting doors of carriages and an apparatus therefor, which improvements are more particularly applicable to common road carriages," upon the condition (amongst others) that I, the said Samuel Smith, my executors or administrators, by an instrument in writing under my or their hands and seals, should particularly describe and ascertain the nature of the said invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said letters patent.

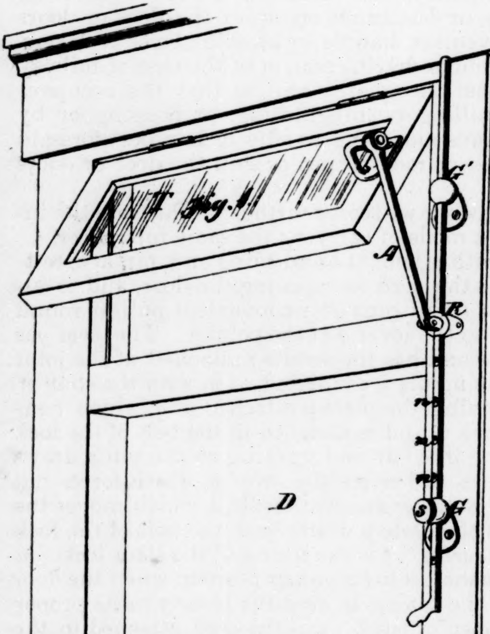
Now know ye, that I, the said Samuel Smith, do hereby declare the nature of my said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:

[illegible] making suitable communication be-[illegible]

J. F. WOLLENSAK.

Transom Lifters and Locks.

No. 136,801. Patented March 11, 1873.



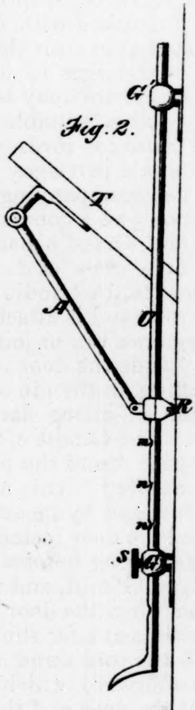
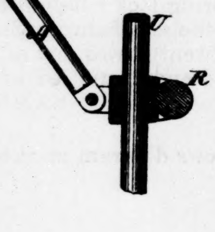


Fig. 3.



No. 304.
Aron
J.
M Ry. C.
} p. 230

Witnesses.
C. F. Brown.
M. Church.

Inventor.
J. F. Wollensak.
by his Attys.
Hill & Ellsworth

the driving seat or seats of such carriages for the purpose of enabling the driver or occupant of the driving seat to open or shut the said doors without descending from the driving seat.

The improvements may also be applied to railway carriages and may be performed by applying various cords, wires, or rods acting by means of convenient pulleys and attached or communicating with locks, bolts, springs, or fastenings on or in the door or doors and furnished with convenient handle or handles, lever or levers, situated at or near the front or driving seat, or in the case of railway carriages in or near the guard's van, so that the occupant
229 thereof may by pulling, pushing, lifting, or pressing, or by
other suitable means move the handle or handles aforesaid and cause the cords, wires, or rods to open or shut the door or doors of the said carriages.

The accompanying drawing will serve further to illustrate the invention and a convenient mode of carrying the same into effect.

a is the handle made with a joint at *b* and hung on a pin at *c*, resting on a plate at *d*. *e* is the cord for opening the door, and is attached to the handle *a* at *f*, and runs over convenient pulleys round the roof, and is attached to the lever *g* at the point *h*. The lever *g* is hung on a pin or joint, *i*, and has the needle *j* attached at the joint *k*. Inside the door is the needle *l*, connected at *m* with the shaft *n*, working on the pin *o*, having the plate *p* attached at *q*, which runs to the self-acting slam lock *r*, and is attached to the bolt of the lock at *s*. The handle *a*, being lifted up and working on the pin *c*, draws the cord round the pulleys and raises the lever *g*, which forces out the needle *j*. This needle strikes another needle, *l*, which moves the shaft *n*, and by means of the plate *p* draws back the bolt of the lock *r*, and the door instantly opens. *t* is the spring of the slam lock. *u* is the spring to force the shaft *n* to its proper position when the door is open or shut, and *v* is the spring to keep the lever *g* in its proper place when the door is open or shut. *w* is the cord, attached to the handle *a* at *x*, for shutting the door, running round the roof parallel with the cord *e* and attached to the door at *y*. By moving the handle *a* forward, which will then work upon the joint *b*, the cord will shut the door and the spring lock *r* fastens it.

In witness whereof I, the said Samuel Smith, have hereunto set my hand and seal this twenty-third day of November, in the year of our Lord one thousand eight hundred and seventy-two.

SAMUEL SMITH. [L. S.]

(Here follows diagram marked p. 230.)

231 UNITED STATES PATENT OFFICE.

JOHN F. WOLLENSAK, of Chicago, Illinois.

Improvement in Transom Lifters and Locks.

Specification forming part of Letters Patent No. 136,801, dated March 11, 1873.

To all whom it may concern:

Be it known that I, John F. Wollensak, of Chicago, in the county of Cook and State of Illinois, have invented a new and improved transom lifter and lock; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a perspective view, Fig. 2 is a side elevation, and Fig. 3 is a section.

Similar letters of reference in the accompanying drawing denote the same parts.

Transom-lifters have heretofore been constructed with a long upright rod or handle jointed at its upper end to a lifting-arm which extends to and is connected with the side or edge of the transom-sash, the sash being opened or closed by a vertical movement of the long rod. When thus constructed the upright rod is liable to be bent by the weight of the transom, owing to the want of proper support at and above the point of junction between the long rod and the lifting-arm. The object of my invention is to remedy this difficulty by constructing and arranging the parts so that they will receive the proper support at the proper points; to accomplish which I first prolong the upright rod to some distance above the point of junction with the lifting-arm, and pass the end thus prolonged through a guide affixed to the wall above said joint; and, secondly, I provide the upright rod with a friction-roller at said point of junction arranged to bear against the wall and help sustain the weight of the sash, substantially as I will now proceed to set forth.

In the drawing, D is the door; T, the transom-sash, pivoted at top, bottom, or middle, as preferred; A, the lifting-arm that connects the sash to the upright rod; U, the upright rod, passing through two guides, G G′, one above and one below the point of junction with the lifting-arm; R, a friction-roller secured to the lifting-rod so as to bear against the wall and support said rod at its point of junction with the lifting-arm; *n n*, notches cut in the upright rod to receive the end of the set-screw; and *s*, a set-screw arranged in connection with the lower guide and the rod U so as to be convenient of operation, for the purpose of fixing the transom at any required angle. The upright rod is thus supported at three points, to wit, above, below, and at the joint where it sustains the weight of the transom. It can also be adjusted and securely fastened so as to open the sash

[illegible]

JOHN L. WOLLENSAK, OF CHICAGO, ILLINOIS.

Improvement in Transom Lifters and Locks.

Specification forming part of Letters Patent No. [illegible], dated March [illegible], 1876.

To all whom it may concern:

Be it known that I, John L. Wollensak, of Chicago, in the county of Cook and State of Illinois, have invented a new and improved Transom-Lifter and Lock; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a side elevation, and Fig. 3 a cross-section.

Similar letters of reference in the accompanying drawing denote the same parts.

[illegible]

In the drawing, [illegible]

[illegible]

A. H. GIBBS.

Shutter-Workers.

No. 138,879. Patented May 13, 1873.

Fig. 1.

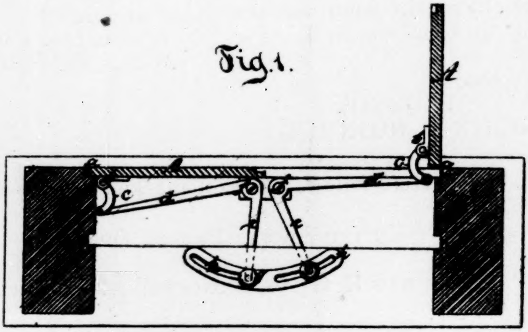
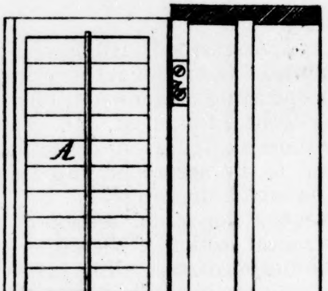


Fig. 2.

No. 304.
Aron
v.
M.Ry.Co. } p. 232.



Witnesses.
Ernst Bilhuber
E. F. Kastenhuber

Inventor
Augustus H. Gibbs
by
Van Santvoord & Hauff
Attys

as much or as little as may be desired, and to lock it in that position.

Having thus described my invention, what I claim as new is—

1. The roller R, arranged at the junction of the lifting-arm A and upright rod U, in a transom-lifter, substantially as and for the purpose described.

2. The guide G′, arranged above the junction of the lifting-arm and upright rod, in combination with the prolonged rod U, the guide G, and arm A, substantially as and for the purpose specified.

JOHN F. WOLLENSAK.

Witnesses:
C. G. HÜLCHE.
JOHN H. SHINKEL.

(Here follows diagram marked p. 232.)

233

UNITED STATES PATENT OFFICE.

AUGUSTUS H. GIBBS, of Norwalk, Connecticut.

Improvement in Shutter-Workers.

Specification forming part of Letters Patent No. 138,879, dated May 13, 1873; application filed February 12, 1873.

To all whom it may concern:

Be it known that I, Augustus H. Gibbs, of Norwalk, in the county of Fairfield and State of Connecticut, have invented a new and improved device for operating window-shutters; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a horizontal section of this invention. Fig. 2 is a transverse vertical section of the same.

Similar letters indicate corresponding parts.

This invention consists in combining with a window-shutter a bell-crank lever, which has its fulcrum on a pivot secured in the window-sill outside of the window, and one arm of which connects by a link with a bracket secured to the shutter, while its other arm connects with a button that slides in a segmental slot in the window-sill inside the window, in such a manner that, by moving the button in its segmental guide-slot, the shutter can be opened or closed without opening the window. The button is so arranged that it can be secured in any part of its guide-slot so as to retain the shutter in any position into which it may be brought.

In the drawing, the letter A designates a shutter, which swings on hinges *a* in the usual manner. Close to the lower hinge is a bracket, *b*, secured to the shutter, and this bracket connects, by a curved link, *c*, with one arm, *d*, of the bell-crank lever *d e*. This bell-crank lever has its fulcrum on a pivot, *f*, secured in the window-sill outside of the window, and its arm *e* connects with a button, *g*, which slides in a segmental guide-slot, *h*, in the window-sill inside of the window. By moving this button in its guide-slot the shutter is opened or closed. The button *g* is screwed into the arm *e* of the bell-crank lever, and it is provided with a flange which bears on the surface of the guide-plate *h*, so that by screwing up said button the arm *e* is drawn up tight against the inner surface of the guide-plate, and the shutter is retained in the position which it may occupy.

When the shutter is constructed in two halves, as shown in the drawing, each shutter is provided with its distinct device for opening, closing, or fastening the same; and I am enabled to secure the shutters in their closed position or in their open position, or in any intermediate position in which the same may be brought; furthermore, the shutter can be operated without raising the windows, and the ordinary devices for retaining the shutters when the same are open or closed can be dispensed with.

My device has also the great advantage that it does not produce any objectionable projection on the interior of the window-frame, and, if properly constructed, it will form an ornament for the window.

I do not claim a chain, made up of a series of links, working in a guide and operated upon by a thumb-screw for opening and closing a shutter; neither do I claim, broadly, operating a shutter from the inside of the window-sash by means of the two pivoted curved levers, for such devices are old and well known, and require much strength to operate them, besides, the operating-lever projects on the interior beyond the sill, and while the mechanism upon the shutter and its lever are exposed on the outside, thus disfiguring the finish of the shutters.

What I claim as new, and desire to secure by letters patent, is—

1. The bell-crank lever *d e* pivoted at *f* on the outside sill, one arm of which is pivoted to the curved link *c* of the bracket *b*, while its other arm connects with the adjustable button *g*, moving in the guide-plate *h*, secured to the sill inside of the window, the whole combined and arranged, substantially as described, for operating a window-shutter or blind, as set forth.

2. The bell-crank lever *d e* pivoted at *f* on the outside sill, in combination with the curved link *c*, said link being pivoted to the bracket and to the lever, as shown, for operating in connection with the button *g* moving in the guide-plate *h* arranged on the sill inside of the window, the several parts being constructed, substantially as described, for opening and closing a window-blind, as set forth.

AUGUSTUS H. GIBBS.

Witnesses:
GEORGE H. RAYMOND.
JOHN N. MARIE.

234 [Coat of arms.]

A. D. 1873, 21st February. No. 653.

Specification of Thomas Poolly Cooper. Closing and Fastening Railway Carriage Doors.

235 [Coat of arms.]

A. D. 1873, 21st February. No. 653.

Closing and Fastening Railway Carriage Doors.

Letters patent to Thomas Poolly Cooper, of No. 3 Frideswide Place, Kentish Town, in the county of Middlesex, gentleman, for the invention of "an improved mode and means for closing and fastening railway carriage doors."

Sealed the 19th August, 1873, and dated the 21st February, 1873.

Provisional specification left by the said Thomas Poolly Cooper at the office of the commissioners of patents, with his petition, on the 21st February, 1873.

—, Thomas Poolly Cooper, of No. 3 Frideswide Place, Kentish Town, in the county of Middlesex, gentleman, do hereby declare the nature of the said invention for "an improved mode and means for closing and fastening railway carriage doors" to be as follows:

For the closing simultaneously and fastening of the whole of the doors of a railway passenger train before its departure from any station or depôt, and on arrival at any station or depôt the unfastening of every door, but without opening.—To accomplish this 236 the hinges at present used are removed from the doors, and at the top and bottom of each door are pins and plates of steel or other metal, to one of which is attached an arm, which works in grooves in a continuous bar extending along the carriage and connected by a coupling with the next carriage, and so on throughout the entire train, the entire working to be under the control of the guard or other person having charge of the train.

Specification in pursuance of the conditions of the letters patent filed by the said Thomas Poolly Cooper in the Great Seal Patent Office on the 21st August, 1873.

To all to whom these presents shall come I, Thomas Poolly Cooper, of No. 3 Frideswide Place, Kentish Town, in the county of Middlesex, gentleman, send greeting:

Whereas Her Most Excellent Majesty Queen Victoria, by her letters patent bearing date the twenty-first day of February, in the year of our Lord one thousand eight hundred and seventy-three, in the thirty-sixth year of her reign, did, for herself, her heirs and successors, give and grant unto me, the said Thomas Poolly Cooper, her special license that I, the said Thomas Poolly Cooper, my executors, administrators, and assigns, or such others as I, the said Thomas Poolly Cooper, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an invention for "an improved mode and means for closing and fastening railway carriage doors," upon the condition (amongst others) that I, the said Thomas Poolly Cooper, my executors or administrators, by an instrument in writing under my or their or one of their hands and seals, should particularly describe and ascertain the nature of the said invention and in what manner the same was to be performed and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said letters patent:

(Here follows diagram marked p. 237.)

238 Now, know ye that I, the said Thomas Poolly Cooper, do hereby declare the nature of my said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:

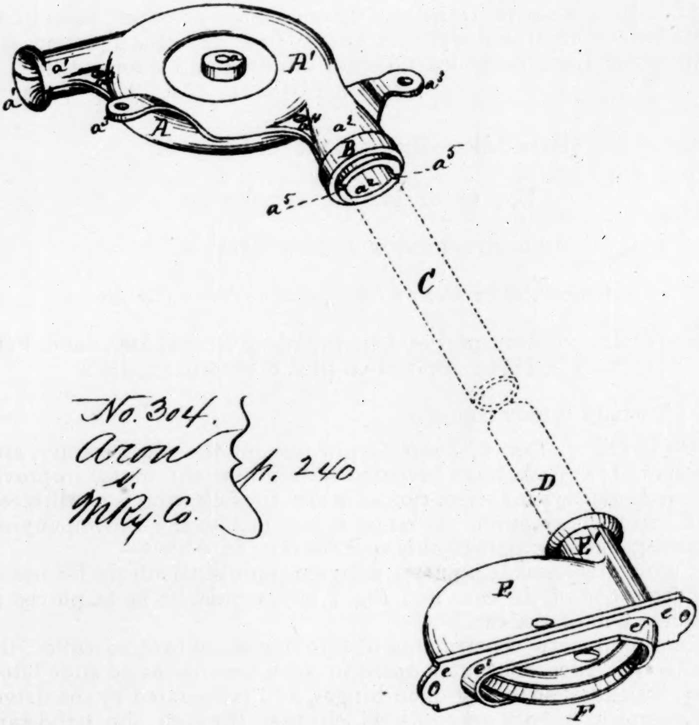
This invention has for its object the closing and fastening simultaneously and unfastening without opening the doors of a railway passenger train by means of a combination of rods and levers. For these purposes the hinges at present used to railway carriage doors are removed and the frame-work so altered that by fixing the pin A at the top and bottom of each door the door shall work on the hinge side in a groove. To one pin of every door is attached the levers B, which work into slots cut into the longitudinal bars C. These bars are attached to the arms D, which are attached to the rack E, into which the bevel wheel F works, being actuated by the continuous rod G, which extends the entire length of the train, having a ball-and-socket joint between each carriage, this rod being worked by machinery to be fixed in the guard's van or elsewhere, as circumstances may require.

In order that when by means of the above-described apparatus the doors have been closed they may be locked. The pins H, which are attached to the rack, are furnished with the two wedges I, one at each end. These are connected by means of the rods J to the small keys K, which are driven by force of the springs L into slots in the longitudinal bar C, and the keys, being held firmly in the groove in which they work, keep the longitudinal bar fixed, and the bar being thus fixed the levers cannot be moved; or, in other words, the doors cannot be opened, they being secured by the levers which run into the slots of the longitudinal bar. To release the longitudinal bar therefore it is necessary to withdraw the keys, which is done by means of the wedge I fixed to the pins H on the rack, which wedge, by partaking of the motion of the rack itself, draws the key out of the slot in the longitudinal bar, and thus releasing it allows the

J. STEPHENSON.

Devices for Operating Street-Car Doors.

No. 147,190. Patented Feb. 3, 1874.



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} p. 240

Witnesses
H H Doubleday
A. Mahon

Inventor.
John Stephenson
by A. M. Smith
Attory

aforesaid bar to be moved. The door-pin lever being thus released, the door can be opened at pleasure.

In order that the doors on one side may remain permanently closed and fastened it will be necessary to turn the handle M, on the spindle of which is a small arm, which raises the rod J off
239 the wedge I, which prevents the key K from being pulled out of the slot in the longitudinal bar C.

In witness whereof I, the said Thomas Poolly Cooper, have hereunto set my hand and seal this twenty-first day of August, in the year of our Lord one thousand eight hundred and seventy-three.

THOS. P. COOPER. [L. S.]

(Here follows diagram marked page 240.)

241

UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, of New York, N. Y.

Improvement in Devices for Operating Street-Car Doors.

Specification forming part of Letters Patent No. 147,190, dated February 3, 1874; application filed September 3, 1872.

To all whom it may concern:

Be it known that I, John Stephenson, of the city, county, and State of New York, have invented certain new and useful improvements in pulleys for street-cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 represents a pulley, adapted more particularly for use at the front end of the car; and Fig. 2 is intended to be employed at the rear end of the car.

In the modern construction of fare-box street-cars, so called, the rear or entrance door is mounted in such manner as to slide laterally, instead of swinging upon hinges, and is operated by the driver by means of a cord or cords, which pass through the hand-rails near the roof of the car. As will be readily understood, the cord, after leaving the hand-rail, must turn at a right angle to slide the door into and out of a recess formed for its reception in the end of the car, and must pass over pulleys placed in the angle thus formed in said cord. The object of my invention is to produce a pulley which shall be especially adapted for this purpose; and to this end the invention consists in, first, mounting the pulley or sheave in an inclosing shell, having a tangential tube or tubes, through which the pull-cord is guided to or from the pulley; second, in combining the hollow hand-rail with the tangential tubes of the pulley-shell, whereby the shell may be made to support the end of the rail, and effectually protect the cord against accidental displacement or injury. The invention further consists in certain details of construction, as will be hereinafter described.

In the drawings, A A′ represent a circular shell, case, or box, divided centrally into two parts, and adapted to receive an ordinary grooved pulley or sheave. By preference, I form the pulley with a central hub or boss, which fits into and is supported by a seat, a, cast in each half of the shell, the hub of the pulley being bored so as to admit a rivet, which assists in securing the two parts of the case to each other. a^1 a^2 are tubes, cast with the shell, and arranged tangentially to the circle occupied by the sheave, and at right angles to each other. The semi-cylindrical sheaves which form tube a^2 form less than a complete cylinder, leaving open slots a^5 between their ends, as plainly shown in the drawings. The outside of this tube is made slightly tapering. B is a ring, fitting the tube accurately. C represents the front end of the hand-rail, which fits closely into the end of tube a^2, in which it is clasped tightly by driving on the ring B, the elasticity of the metal permitting the necessary compression of the two portions of the tube. a^3 are lugs or ears cast upon shell A A′, by means of which the device may be secured to the wall of the car. a^4 are webs, through which rivets pass, as shown. D represents the rear end of the hand-rail. E is a shell, usually cast in one piece, and inclosing another pulley, F, one side being open for the insertion of the sheave. This shell has also a tangential tube, E′, similar to those attached to shell A A′. e is a flange projecting from shell E, in such relation to the open side e' that when the flange is secured to the wall with the part e' projecting through a mortise, the periphery of the sheave shall be on a line with the inner face of the wall, so that the cord shall pass readily to the door.

It will be understood that two sets of these pulleys and hand-rails are required in those cars in which the driver both opens and closes the door by hand—that is, without the employment of weights or counter-balances—the tubes a^1 in each turning inward toward the driver from each side of the door; and, when preferred, a single continuous cord may extend from one side of the door through tube E′, through hand-rails D C, through tubes a^2 a^1, across the doorway, and back through the other set of devices to the opposite side of the door; and it is apparent that the cord is entirely hidden from sight and protected from injury from the time it leaves the door until it reaches the driver.

After the pulleys are in position the cord can be thrust through them and through the hand-rail before said rail is inserted in the tubes, after which the rail can be put in place by inserting one end, C, in tube a^2 far enough to permit end D to enter tube E′, when it (the rail) may be secured by driving on ring B, as has been explained above. I do not wish to be limited to the method
242 shown of connecting the rail with the tubes, as they may be
screwed in, or any other well-known joint may be adopted; but I regard this as being very convenient and effective.

Having thus described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The pulley case or shell provided with the tangential tube, one or more, through which the cord is guided to the sheave, substantially as described.

4 Sheets--Sheet 4.

J. STEPHENSON.

Devices for Operating Street Car-Doors.

No. 155,118. Patented Sept. 15, 1874.

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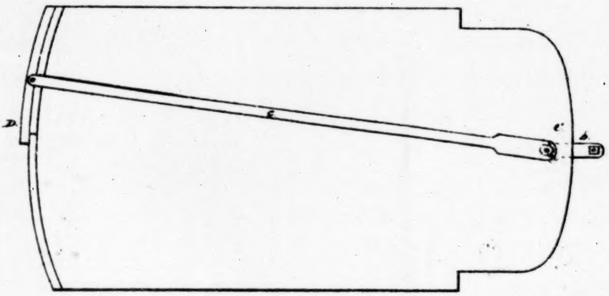
M.Ry. Co. } p. 246

Fig. 9.



Witnesses:
A. McCallum
D. G. Stuart.

Inventor:
John Stephenson
per D. Hannay
atty.

4 Sheets--Sheet 3.

J. STEPHENSON.

Devices for Operating Street Car-Doors.

No. 155,118. Patented Sept. 15, 1874.

No. 304
Argue
S.
M. Ry Co. } p 245

Fig. 5.

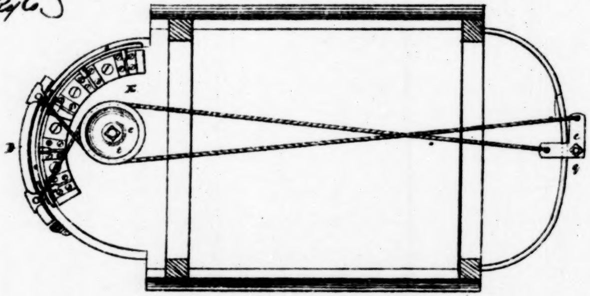


Fig. 6.

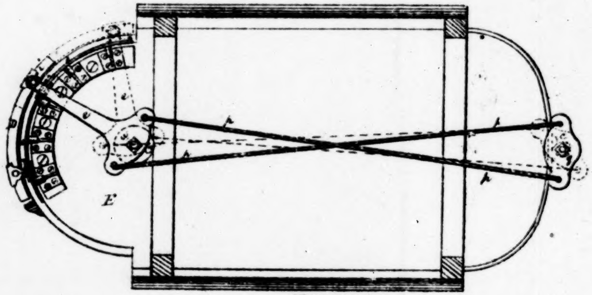


Fig. 8.

WITNESSES.
A. McCallum
D. C. Stuart

INVENTOR,
John Stephenson
per S. Hannay
ATTORNEY

244

4 Sheets--Sheet 2.

J. STEPHENSON.

Devices for Operating Street Car-Doors.

No. 155,118. Patented Sept. 15, 1874.

No 304 }
Aron } p. 244
W. Ry Co }

Fig. 3.

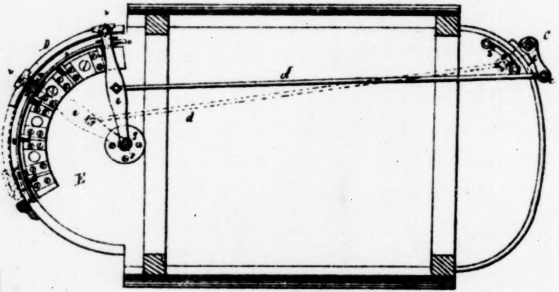


Fig. 7.

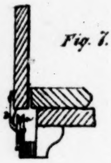
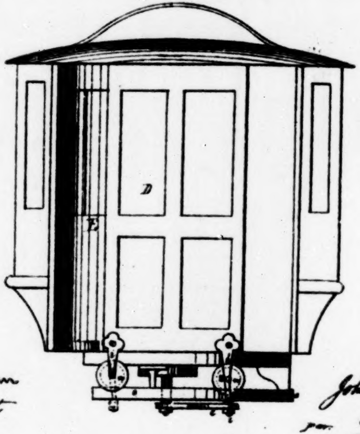


Fig. 4.



WITNESSES:
A. McCallum
D. G. Stuart

INVENTOR.
John Stephenson
per S. Kenney
ATTORNEY

243

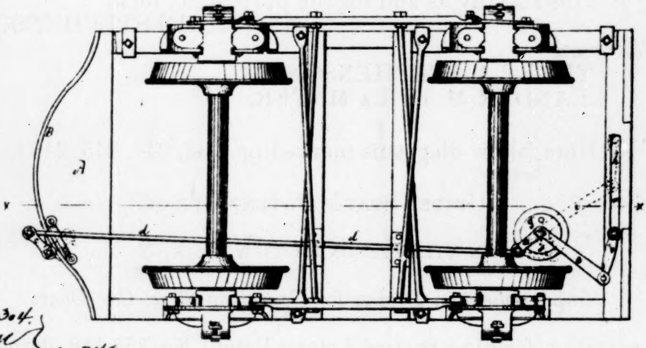
4 Sheets--Sheet 1.

J. STEPHENSON.

Devices for Operating Street Car-Doors.

No. 155,118. Patented Sept. 15, 1874.

Fig. 1.



No. 304.
Aron
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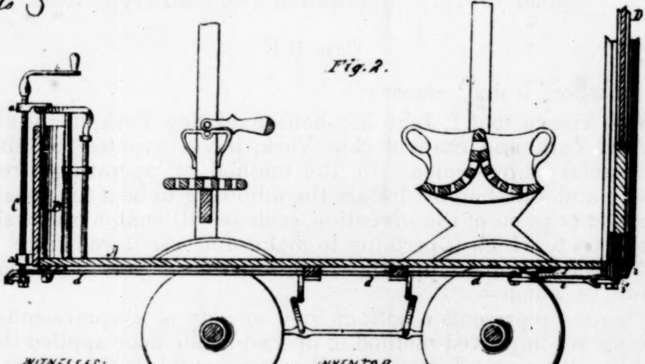
Fig. 2.



WITNESSES:
A. McCallum
D. G. Stuart

INVENTOR
John Stephenson
per
L. Hannay
Atty.

2. The pulley-shell provided with tangential sleeves, in combination with the hollow hand-rail, substantially as described.

3. The pulley-shell A A′, provided with lugs or ears a^3, for securing said shell to the wall of the car, as set forth.

4. The pulley-shell A A′, provided with the circular seats a, in combination with the pulley having projecting hubs, by means of which the pulley is supported in said seats, and with a rivet passing through said hubs to secure the two parts of the shell together, substantially as described.

5. In combination with the tube a^2, provided with the slots a^5, the ring B, substantially as and for the purpose set forth.

JOHN STEPHENSON.

Witnesses:
STUART A. STEPHENSON.
LEANDER M. DE LA MATER.

(Here follow diagrams marked pp. 243, 244, 245, 246.)

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UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, of New York, N. Y.

Improvement in Devices for Operating Street-Car Doors.

Specification forming part of Letters Patent No. 155,118, dated September 15, 1874; application filed January 5, 1874.

Case B B.

To all whom it may concern:

Be it known that I, John Stephenson, of New York, in the county of New York and State of New York, have invented certain new and useful improvements in the method of operating street-car doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 represents a bottom view or plan of a square-ended car having my improved method of operating the door applied thereto, and Fig. 2 a vertical section of the same as taken through the line x x of Fig. 1. Fig. 3 represents a plan or bottom view of a car having a semicircular extension at the rear, and door moving in a circular way, having my improved method of operating the door applied thereto, the running-gear of the car being removed; and Fig. 4, a rear elevation of the same. Figs. 5 and 6 represent bottom views of modifications of my improved method as applied to Fig. 3, or the car with the semicircular extension; Fig. 7, a detached view of the door-leg and roller, and Fig. 8 a modified form of the operating-lever. Fig. 9 represents another modification of my method of operating the door.

The extensive use of street-cars managed without the aid of a conductor has created a demand for methods by which the driver can operate the rear door of the car. My present invention relates solely to an improved method of effecting this object, and is especially adapted to cars having an inclosed extension beyond the rear of the car-body, although it also works well on cars of ordinary form. This improved method consists in combining a rock-shaft in the front of the car with the door in the rear in such manner that the driver, by turning the former through the instrumentality of a crank handle or lever arranged on one of its ends, and within convenient reach of his hand, can open or shut the door, according to the direction in which he turns it, by reason of an arm or arms secured to its other end, and of a suitable connection or connections made between it or them and the door.

To enable others skilled in the art to make, construct, and use my improvement, I will now proceed to describe its parts in detail, omitting a particular description of such parts of a car as are non-essential to a full understanding of my present invention.

In Figs. 1 and 2 the car is represented as being of the ordinary form—that is to say, of an oblong form, and having the door, on being opened and shut, sliding in a right line across the end of the car. Immediately at the front end, and slightly at one side of the driver's platform A, in suitable bearings *a*, secured to the frame of the dash-board B, is mounted a rock-shaft, C, having a crank handle or lever, *b*, secured to or otherwise formed on one end, for the use of the driver, and an arm or lever, *c*, at its other end, through which *and* a suitable device or devices to open or shut the passenger-door at the rear of the car. A suitable device for this purpose is represented in Figs. 1 and 2 of the drawings, and which consists of a stout rod, *d*, pivoted at one end to the outer end of the arm *c*, and at the other to one end of an operating-lever, *e* (in this case of angular form), and having its fulcrum, at or near the apex of its angle, on a pivotal pin, *f*, fastened, by means of a plate, *g*, to the bottom of the car. To the other end of the angle-lever *e* is pivoted one end of another arm or lever, *h*, the other end of which is pivoted to the end of an arm, *i'*, suitably attached to the door D. In this case the arm *i'* is secured to one of the plates which support the axle of the ordinary grooved rollers or sheaves *n*, that carry the door D, and of which there are two, and run on a way, *o*, secured to the upper side of the end rail of the car; but the car may have its door hung to run or roll by any of the known methods, in either of which cases, however, a guide-slot, *m*, is used, through which the leg *i'* passes or extends, and is then connected to the arm *h*, as before described. The door thus connected with the rock-shaft C can be instantly opened or closed by simply turning the crank *b* in the required direction. 248 This mode is specially adapted to the operating of car-doors which slide or move in a straight line, as in the ordinary square-ended car, or in cars having an extension in the rear, with straight sides set at an angle to each other, and provided with a door moving in a right line. In Figs. 3 and 4 the same device is represented as being applied to the door of a car with a curved extension, E, in rear, the door in this case being correspondingly curved, and when opened or shut traveling in a correspondingly-curved way. The device in this case simply differs in the construction or shape of the operating-lever *e*. In the former case it was made crooked or angular, and pivoted at the angle; in this it is straight, and pivoted at one end to the bottom of the car, and radial to the curve of the extension, its outer end being attached, or rather mounted, directly upon the lower end of the door-leg *i'* as on a pivot, and on which it is kept in place by a screw-nut or other suitable device. The connecting-rod *d* in this case is pivoted to the lever *e* at or near its middle, according to the length of throw of the arm *c* on the end of the rock-shaft C, so that it shall be able fully to open or close the door, and no more. A stop-piece, *s*, in both cases, is arranged at the side of the arm *c*, to arrest its course when the door has been fully opened or closed to prevent unnecessary jar and shattering of the glass.

This car, with its inclosed extension, like the ordinary car, may have its rear door hung to roll or run by any of the known methods, although it is deemed better to have the rail or way *o* external of the car, and the door supported by two legs, *i* and *i'*, the foot of one, *i*, being bent around to form an axis for one of the supporting sheaves or rollers *n*, and the foot of the other leg, *i'*, resting in the end of the lever *e*, which operates the door. A spur, *z*, secured to to the inner side of this leg, forms the axis of the other or second sheave or roller.

The door, as thus connected to the rock-shaft, is operated by the driver, through the medium of the handle *b*, by a pull-and-push motion of the connecting-rod *d*, according as the door is intended to be opened or shut.

The connection between the operating-lever *e* and the rock-shaft may be modified by using two smaller rods, or their equivalents (two cords or chains, *p*, Fig. 6), in which case the power will be transmitted to the door both ways by a pull-motion. To this end the operating-lever *e* should have its back end to extend beyond the fulcrum of the lever, and fork, so as to receive the two pull-connections, and so as each shall be equidistant from the fulcrum; or it may be desirable to give its back end the form shown at *w* in Fig. 6. In either event the use of such will involve the use of two arms or a cross-head, *q*, on the lower end of the rock-shaft, as shown in Figs. 5 and 6. Or the pull-connections, when they consist of cords or chains, may be connected directly to the two legs of the door, and to the cross-head *q* at their other ends, as shown in Fig. 5, in which case a grooved friction roll or rolls, *t*, may be used with advantage as a fulcrum for the flexible levers (the cords or chains) whereby to open or close the door; or the rolls *t* may be dispensed with, and the cords or chains crossed in their passage to the reverse ends of the cross-head; or the door of the curved extension may be closed by the use of a straight pivoted lever, *e*, having a single rearward extension, such as that shown in Fig. 8, to the extremity of which the outer end of the arm *c* of the rock-shaft, by means of a longitudinal slot cut therein, may be pivoted, while its inner end would be pivoted to the leg or pendant secured to the lower part of the door.

Many other ways may be described of operating the door through the medium of a rock-shaft carrying a handle for the use of the driver, and an arm or arms at its other end for operating the door, such as that shown in Fig. 9; but as such would not in any degree alter the principle of my invention, it is not deemed necessary to describe them, nor are such deemed unprotected by this patent.

Having described my invention, what I claim as new, and desire to secure by letters patent, is—

A rock-shaft, C, carrying at one end a crank-handle, *b*, at the front of the car, and at the other an arm or arms, *c*, in combination with a car and car-door, the arm or arms *c* being suitably connected to the latter, in the manner substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of December, 1873.

JOHN STEPHENSON.

Witnesses:
JOHN S. PUGH.
WILLIAM J. WALKER.

(Here follows diagram marked p. 249.)

250 UNITED STATES PATENT OFFICE.

GEORGE M. BRILL, of Philadelphia, Pennsylvania.

Improvement in Operating Car-Doors.

Specification forming part of Letters Patent No. 157,368, dated December 1, 1874; application filed October 22, 1874.

To all whom it may concern:

Be it known that I, George M. Brill, of the city and county of Philadelphia and the State of Pennsylvania, have invented a new and useful improvement in operating car-doors; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a longitudinal vertical section in line *x x*, Fig. 2. Fig. 2 is a front view, the front wall of the car being removed.

Similar letters of reference indicate corresponding parts in the two figures.

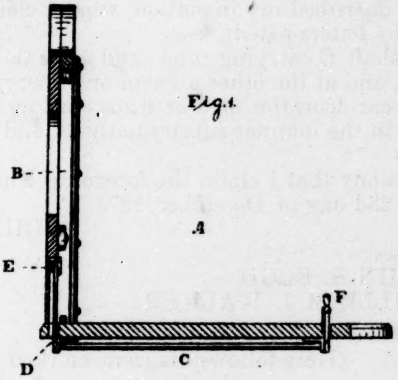
This invention relates to the operation of a car-door from the front platform; and consists of a slotted arm, which engages with a pin or stud on the car-door, and, reciprocating by means of a rock-shaft, imparts the necessary opening and closing motions of the door.

G. M. BRILL.

Operating Car Doors.

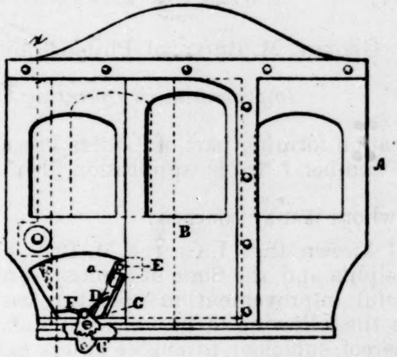
No. 157,368. **Patented Dec. 1, 1874.**

Fig.1.



No. 304 Aron v. M Ry Co } p. 249

Fig.2.



Witnesses:

L. F. Brown

A. P. Grant

Inventor:

George M. Brill

by John A. Wiedersheim

Atty.

The rock-shaft extends forward to the front part of the car, and is engaged by a lever, which is under control of the driver, and constructed of two parts to increase the leverage, which is another feature of my invention.

Referring to the drawings, A represents the body of a car, and B the door sliding at the rear thereof. At the bottom of the car there is mounted a rock-shaft, C, which extends longitudinally and carries at its rear end an arm, D, which projects upwardly in a space in the rear wall or walls of the car. The upper portion of the arm D is slotted in the direction of its length, as at *a*, and into the slot is fitted a pin or stud, E, which is secured to the door B and extends longitudinally therefrom.

The front portion of the shaft is operated by a lever, F, which should be within reach of either the foot or hand of the driver, said lever having an axis on the floor or bottom of the car, and carrying a toothed segment, G, which meshes with another segment, G′, secured to the rock-shaft.

In lieu of the segments the lever may be extended below its axis and an arm secured to the rock-shaft, and by means of a slot and pin the power of the lever may be communicated to the rock-shaft.

The operation is as follows: The driver wishing to open the door depresses, by foot, the proper side of the lever F, which thus causes a rotation of shaft C and moves the arm D therewith, which arm describing the arc of a circle, draws the door with it, but owing to the slot *a* it permits a right-lined movement of the door, so that there is no rising or binding of the latter.

Should a hand-lever be employed, the operation will be similar to that of the foot-lever just described.

It will be seen that by properly operating the lever the door will be closed, the movement of parts being in reverse order to that performed in opening the door.

It will also be seen that by means of the gearing G G′ a short motion of the lever F will impart, through the rock-shaft C, a large motion to the arm D, and consequently to the door B.

The door will be found to be quickly, easily, and reliably opened and closed, and the means therefor are simple, inasmuch as but few parts are employed, the door remaining intact and the arm D swinging in a space not otherwise occupied.

Owing to the latter feature it is evident that my invention is readily applicable to cars in service, it being requisite only to apply the pin or stud to the door, secure the rock-shaft in position, introduce the arm D in the back space or groove of the car, and properly mount the operating-lever F on the platform.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the sliding car-door, of the pin or stud E, secured to said door, and the swinging arm D formed with a slot, *a*, substantially as and for the purpose set forth.

2. The combination of the slotted arm D, pin or stud E, rock-shaft C, and lever F to operate a car-door, as set forth.

3. The combination, with the car-door, of the pin or stud E,

swinging arm D, rock-shaft C, lever F, and the gearing G G′, intermediate of the said lever and rock-shaft, substantially as and for the purpose set forth.

GEO. M. BRILL.

Witnesses:
JOHN A. WIEDERSHEIM.
JNO. H. BELL.

(Here follows diagram marked p. 251.)

252 UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF New York, N. Y.

Improvement in Street-Cars.

Specification forming part of Letters Patent No. 162,964, dated May 4, 1875; application filed April 27, 1875.

CASE G^{3a}.

To all whom it may concern:

Be it known that I, John Stephenson, of New York, in the county of New York and State of New York, have invented certain new and useful improvements in street-cars; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 represents a side elevation of a street-car having my improvement applied thereto, the running-gear being removed. Fig. 2 represents an end elevation of the same, and Fig. 3 a detail section of the lower end of the door and its adjuncts. Fig. 4 represents a modification of the device for operating the rack-bar that operates the door.

My invention relates to an improved mode of operating the entrance-door of street-cars, and consists in a new and improved combination of operating devices with the entrance-door of a car provided with a rack-bar, whereby the driver can more readily and surely open and close the door in the rear while at his post in front.

In this application the broad idea of operating the entrance-door of a car by means of a rack and an operating gear, and suitable mechanism to operate the latter is not claimed, as such forms the subject-matter of original application, marked Case G^3, and from which the subject-matter of this application is hereby withdrawn, and called Case G^{3a}.

Tn enable others skilled in the art to make, construct, and use my improvement, I will now describe its parts in detail, omitting a description of such parts of a car as are unnecessary to a full understanding of my present improvement.

J. STEPHENSON.

Street-Car.

No. 162,964. Patented May 4, 1875.

Fig. 1.

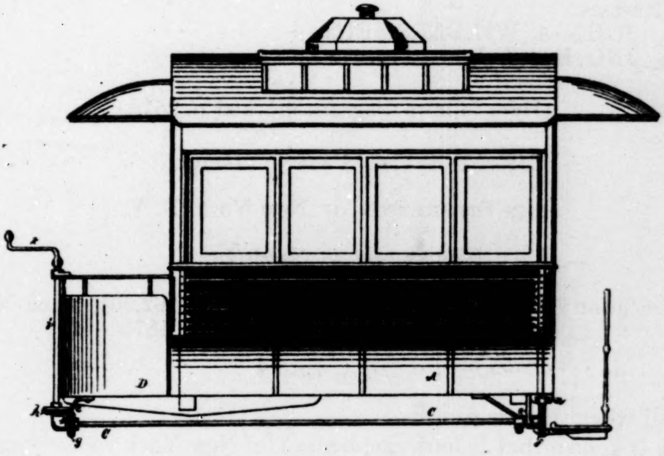


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Fig. 2.

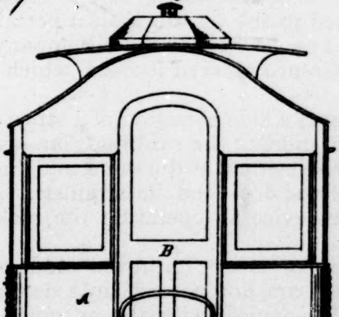


Fig. 3.

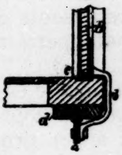
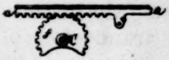


Fig. 4.



Witnesses.
D. G. Stuart
L. Van Rieswick

Inventor
John Stephenson
per S. Hannay
Atty.

The forward end of the car-body, so far as this invention is concerned, may be made in any suitable way; but the rear end and its entrance-door should be so constructed that the latter can be made to slide back and forth in opening or closing the entrance to the car.

A represents a car-body adapted to my purpose, it being provided with a sliding door, B, to the lower end of which is secured a rack-bar, *a*, by means of a bracket or brackets, *b* (see Fig. 3), to which it is firmly bolted. The lower end of the door is made to rest and slide on a rail or way, *c*, arranged on and secured to the rear end and upper side of the car-floor.

If desired, the door may be provided with grooved rollers for its support on the rail *c*, and to facilitate its operation.

The rack *a* may or may not be made to slide in a guide-groove; but it is preferred to do so. This plan is shown in Fig. 3, the rack-bar for this purpose being shown as of a **T**-shape in its cross-section, and so arranged as to slide in a correspondingly-grooved block, *d*, secured to the under side of the car-body at its rear end. By so making it, the door is made to move more evenly and steadily than it might otherwise do. For many reasons I prefer to locate the rack-bar below the end sill of the car, yet it might be arranged above the door, and at various other points, without in any way altering the principle of its application to the door, or of its mode of operation.

To the under side of the floor or bottom of the car is suspended a shaft, C, by means of hangers *e*, having suitable bearings for the mounting of the shaft. At the rear end of this shaft is secured a pinion-wheel, *f*, the teeth of which are made to mesh with those of the rack-bar *a*, while at its front end is secured a beveled pinion, *g*, which meshes with the teeth of a corresponding bevel-wheel, *h*, which, in turn, is mounted on the lower end of a crank-shaft, *i*, located at the front end of the driver's platform D, and through the crank-handle *k* of which the driver is enabled to impart motion to the door B in the rear, by means of the said shaft *i*, bevel-gears *h* and *g*, shaft C, pinion *f*, and rack-bar *a*. This arrangement of the shaft C, pinion *f*, and gears *g* and *h* below the body of the car is to adapt it to the operation of the rack *a*, as arranged below the rear sill of the car.

In the event of a different arrangement of the rack, a correspond-
ing arrangement of the shaft C and *c* may be required to be
253 made in order to operate it, but which would in no way in-
volve a change of principle in the operating devices, but simply such change as could be effected by any competent mechanic skilled in car-building.

Instead of using a full pinion, *f*, a segmental pinion of suitable size and number of teeth may be used for the purpose. Such a pinion is shown in Fig. 4. In such case shaft C would act simply as a rock-shaft, the pinion and rack-bar being relatively so constructed that a partial revolution of the shaft would suffice fully to open or close the entrance to the car. As a rule, however, pinion *f* is preferred.

Having described my invention, what I claim in this application, and desire to secure by letters patent, is—

The combination of a rack-bar, *a*, and the rear or entrance-door of a street-car with an operating gear, shaft C, bevel-gears *g* and *h*, and crank-lever *i*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN STEPHENSON.

Witnesses:
AUGUST RIPPERGER.
STUART A. STEPHENSON.

(Here follows diagram marked p. 254.)

255 UNITED STATES PATENT OFFICE.

JOHN A. MOORE and THOMAS M. THOMPSON, of Pittsburgh, Pa.

Improvement in Gates for Railway Passenger-Cars.

Specification forming part of Letters Patent No. 185,344, dated December 12, 1876; application filed April 25, 1876.

To all whom it may concern:

Be it known that we, John A. Moore and Thomas M. Thompson, both of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful improvement in gates for the steps of passenger railway-cars; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention relates to an improvement in passenger railway-cars; and consists in pivoting to the sides of the car, and near each end of it, gates for the purpose of shutting off the steps leading up to the entrance-platform, said gates being constructed of strips pivoted together, so as to form lattice-work, and susceptible of being folded up for the purpose of opening the gate, and unfolded for closing it.

To enable others skilled in the art to which our invention is most nearly connected to make and use it, we will proceed to describe its construction and operation.

In the accompanying drawings, which form part of our specification, figure 1 is a side elevation of a section of a passenger railway-car provided with our improvement in gate, and represents the entrance to the steps closed. Fig. 2 is a side elevation of the same, representing the gate opened. Fig. 3 is an end elevation of a passenger-car furnished with our improvements.

In the accompanying drawings, A represents the railway passenger-car, which is of the ordinary construction. B represents the gate, which is constructed of strips of wood or iron. The strips *r* are arranged vertically, and the strips *s* arranged at right angles to

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J. A. MOORE & T. M. THOMPSON.

GATES FOR RAILWAY PASSENGER-CARS.

No. 185,344. Patented Dec. 12, 1876.

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Aron
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Fig. 1.

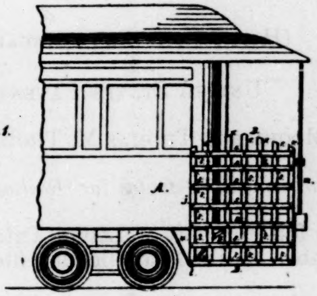


Fig. 2.

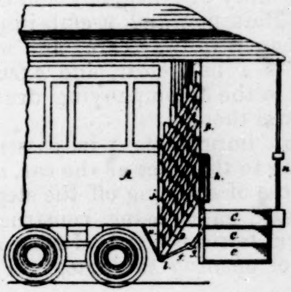
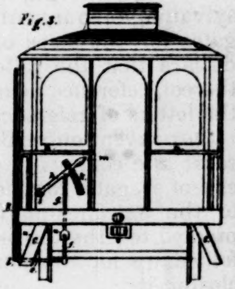


Fig. 3.



Witnesses
John C. Stearns
E. N. Colwell

Inventors.
John A. Moore & Thomas M. Thompson,
By Johnston & Dorr
their Attorneys

[illegible] to the side [illegible]

B is secured at 1 to the slats, which are folded in bearings or sup-ports [illegible]

[illegible]

1. In a gate, the combination of a gate with the [illegible] consisting of vertical and horizontal strips pivoted together, forming lattice-work, and secured to the sides of the [illegible] and opened by folding it up and closed by unfolding it, substantially as described, and for the purpose set forth.

2. In a [illegible] in combination with the [illegible] consisting of vertical and horizontal [illegible] pivoted together, forming lattice-work, and secured to the side [illegible] and opened by folding it up and closed by unfolding it, through the operation of the [illegible] and connections [illegible] substantially as [illegible] for the purposes set forth.

[illegible]

[illegible]

them, and pivoted at *t*. The strip marked *j* is secured to the side of the car, near to the end, as indicated in Figs. 1 and 2. The bar D is secured at *l* to the shaft *e*, which is pivoted in bearings or supports *u*.

To the inner end of the shaft *e* is attached a lever, *f*, to which is pivoted a lever or connecting-rod, *g*, which is at its upper end, attached to a hand-lever, *h*, which, at *i*, is pivoted to the end of the body of the car. The end *m* of the lever *h* is held in position by notches in the guide or guard *k*. The railing *n* of the platform and the steps C are of the ordinary construction.

From the foregoing description, and by reference to the accompanying drawings, the skillful mechanic will readily understand the construction of our improvement in gates and the several parts connected therewith. We will therefore proceed to describe its operation, which is as follows: When the operator desires to open the gate B, as shown in Fig. 1, he draws upward the inner or handle end of the lever *h*, which will draw up the rod *g* and lever *f*, which will turn the shaft *e*, which will move the strip D, causing it to act on the vertical strips *r*, so as to fold up the strips *s* and *r*, opening a passage-way to the steps C, as shown in Fig. 1. The gate is unfolded or closed by pressing down on the lever *h*.

By constructing gate as hereinbefore described it will be light and easily manipulated by means of the lever *h* and its connections.

The object of the gate is to prevent ingress to the steps C and platform of the car, and also to prevent egress from the platforms and steps while cars are moving, thereby avoiding accidents which are common, and caused by persons boarding and leaving the cars when they are moving.

Having thus described our improvement, what we claim as of our invention is—

1. In a passenger railway-car, the combination of a gate with the steps leading up to entrance-platform, said gate consisting of vertical and horizontal strips pivoted together, forming lattice-work, and secured to the sides of the car, and opened by folding it up, and closed by unfolding it, substantially as herein described, and for the purpose set forth.

2. In a passenger railway-car, a gate in combination with the steps leading up to the entrance-platform, said gate consisting of vertical and horizontal strips pivoted together, forming lattice-work, and secured to the side of car, and opened by folding it up and closed by unfolding it, through the medium of a hand-lever and operating-rods connected therewith, substantially as herein described, and for the purpose set forth.

JOHN A. MOORE.
THOMAS M. THOMPSON.

Witnesses:
JOHN C. STEVENS.
E. N. COLWELL.

256 [Coat of arms.]

A. D. 1877, 16th March. No. 1072.

Specification of Alexander Melville Clark. Tramway Cars.

257 [Coat of arms.]

A. D. 1877, 16th March. No. 1072.

Tramway Cars.

Letters patent to Alexander Melville Clark, of 53 Chancery Lane, in the county of Middlesex, patent agent, for the invention of "improvements in tramway cars." A communication from abroad by John Stephenson, of New York city, in the county and State of New York, United States of America.

Sealed the 15th June, 1877, and dated the 16th March, 1877.

Provisional specification left by the said Alexander Melville Clark at the office of the commissioners of patents on the 16th March, 1877.

Alexander Melville Clark, of 53 Chancery Lane, in the county of Middlesex, patent agent. "Improvements in tramway cars." A communication from abroad by John Stevenson, of New York city, in the county and State of New York, United States of America.

This invention consists of various improvements in tramway cars.

The first part of the invention relates to the brakes, and consists in an arrangement for preventing the tilting of the car when the latter is stopped suddenly by the application of the brakes. In this arrangement the brake blocks are dispensed with on the external sides of the wheels to afford place for the wheel guards, and diagonal stays are provided to prevent the brake blocks being displaced. The brake blocks are suspended from the floor of the car so as to occupy their proper positions near the periphery of the wheels. The brake blocks for each pair of wheels are attached at the ends of horizontal cross-bars, which are connected at or about the middle of their length by adjustable eyebolts and short connecting rods to a horizontal lever lying in a more or less oblique transverse position to the car. This lever works on a vertical pivot at the middle of its length, fixed under the floor of the car in the centre line of the vehicle. The extremities of this lever are connected by rods and chains with drums or reels at the ends of the car, worked by the ordinary crank handle, to wind the chains upon them in order to apply the brakes. Diagonal stay rods are connected by one end to the transverse bars carrying the brake blocks and by the other end to the floor of the car.

By using brakes only between the two pair of wheels I am
258 enabled to provide a wheel guard or scraper serving to pre-

vent injury to persons who may fall in front of the car, also to clear the rails of dirt and other obstructions, the said guard or scraper consisting of a plate of steel placed in a forwardly inclined position directly in front of the wheels. This guard is carried at the free end of an arm, to which the guard is fitted by a sliding joint, so arranged that the guard may be adjusted at any desirable proximity to the rail, the said arm being bolted to the axle box and curved to hold the guard directly in front of the wheel. The lower end of the guard may have an adjustable piece of hardened steel for enduring service in scraping the rail.

Another form of scraper or guard, though not so automatic, consists in the steel plate pivoted to the lower end of an arm attached at its upper end to the under side of the car platform and thence extending diagonally downward in shape to bring the plate at the lower end upon the rail. The contacting part or scraper may be a piece of hardened steel connected to the arm by a hinge joint so as to readily trip on contact with a spike head or other obstacle or by the motion of the car being reversed. The arm should be of steel plate and so shaped as to lift the scraper from the rail until forced down by a lever operated by a pedal and connected by a rod with the spring arm when required.

An improvement in the end platforms of the car consists in enclosing the driver's platform on all sides by carrying the dash rail and apron in semicircular form, so that the ends of the dasher make junction with the body of the car near the front corners. A gate may be arranged at one side for the convenience of the driver. In cars hauled at either end alternately a pair of gates may be provided, hung in such manner as to be readily transferred from one platform to the other as needed. The dasher apron is protected from damage at one side by the brake reel and at the other side by an iron stay rod or guard extending from the dasher rail at the top to the floor of the platform.

In cars which are turned round at the end of the journey, and therefore proceed always in one direction, the rear platform is at a lower level than the floor of the car, and thus serves also as a step intervening between the car floor and the ground.

The platform is supported on an iron frame bolted to the under framing of the car and which rises to a sufficient height at the rear edge of the platform to afford protection to the passengers in entering and leaving the vehicle.

The lamp-house in which is located the lamp for illuminating the car, and which lamp by a system of reflectors augments the light, and in combination with the lens projects the rays of light beyond the car for signal, and by peculiar method of introducing the atmosphere secures more perfect combustion and freedom from smoke and also prevents the unpleasant effluvia from offensive oils. The lamp-house is hinged at the top, opening outward and upward, and when turned up is held in place by an S hook attached to the ceiling of the car. The door when shut is held tightly closed by another hook or any other of the known methods. Within on the floor of the lamp-house is placed the lamp, the bottom of which has

a downward projection lodged in a cavity in the floor, the under side of this cavity being closed by any available method, though I prefer a metal dish because convenient for catching drippings of the oil. Directly behind the lamp is a reflector with a transparent opening, which permits the light of the lamp to shine through it and the lens placed in or beyond the opening. The lens may be of tinted glass or in combination with tinted glass, for the purpose of making signal. In addition to this reflector are placed two other reflectors, placed diagonally at such angle or angles as will best diffuse the reflected light within the car. These reflectors may be of any desirable form or construction. To insure proper combustion the lamp-house is supplied with atmosphere from outside the car by means of a series of ducts or any other mode of inlet near the floor of the lamp-house, and the discharge of smoke from the lamp-house is through a smoke-stack passing from the apex of the lamp-house up through the roof and terminating in a cowl. Within the smoke-stack and over the glass chimney is located a shield, so arranged that a rush of air down the smoke-stack will be diverted from
259 passing down the glass chimney. It is sometimes convenient to
have from this shield or its vicinity pendants forming fingers for steadying the upper end of the glass chimney.

A system of signal bells which enables passengers while seated to signal the conductor without alarming the driver, and in a car operated without conductor to signal the driver, consists as follows: Near each internal side wall of the car is placed a series of hand-pulls, preferably located at the pillars, and in a position to be easily reached by passengers. The operation is best when the bell-cords are near the eaves of the roof, so that the pulls may hang perpendicularly. The system thus described is adapted to cars managed by the driver without conductor, but for a car with conductor and driver it is best to have three lines of bell-cords, viz., first a central line located at or near the highest part of the roof, out of convenient reach of passengers. This central cord extends from platform to platform, with a bell at each end for the use exclusively of driver and conductor. At each side of the car is also located a bell-cord with bell and the necessary hand-pulls; but each side cord is so arranged that the bell at either end may be detached, and passengers using the bell-pulls at one side only communicate with the conductor, while, as before provided, the conductor and driver communicate through their exclusive line.

The method of hanging and operating the doors of the cars is as follows: The usual manner of running the doors is by sheaves or rollers at the lower edge of the door, which rollers travel on a rail resting on the car floor, but the surface of the rail is seldom free from obstructions, which cause the door to be moved with difficulty. For this and other reasons I hang the door by sheaves and rollers travelling on overhead rails, and I place part of the supporting rail above the head of the door frame, and the other part of the rail in a lower plane at one side of the door frame. By this arrangement the sheave or wheel at that edge of the door is free from contact with the car roof.

When a car is managed by the driver without a conductor it is desirable that the driver should control the entrance door, to open or close it at pleasure; this I accomplish by various mechanisms.

One method of moving the door is by means of a lever and rock shaft. The lever is fixed on the rock shaft, and has a handle in convenient reach of the driver. The power of the driver is transmitted through the lever and rock shaft and a lever arm at the rear end of the latter to the rear door, which is connected to said lever arm by a pin working in a slot or otherwise, the mode of connection with the door not being material provided it is efficient. Though the passage of the rock shaft (provided with universal joints where necessary) through the upper part of the car is the preferable mode, the connection with the hand lever may be under the floor of the car, or under the seats, or behind the backs of the seats, or in any other part of the car, through which the power of the driver to operate the car door may be transmitted to the door by means of a lever or levers, or an arm or arms, or through a rock shaft.

Another method of operating the door is by mechanism composed in part of cog gearing. In this arrangement the car door has sheave wheels at the lower edge which travel on a rail. Connected with the bottom of the door is a toothed rack-bar, into which a toothed cog wheel meshes. The axis of the cog wheel extends to the front of the car forming a rock shaft, and there receiving a rotary motion from the driver by means of a lever or cog gearing, of bevel wheels or any other device, as the important part of the invention is the facility or mechanism to move a car door by the driver through the medium of cog gearing.

Another device for operating a car door by the driver is the combination, with the door, of cords and pulleys, the cord or cords being attached to the door, passing around pulleys at the angles of the circuit, and extending within reach of the driver, so that he may open or close the door at pleasure. It is best for the cords to pass from the door to the driver through pipes or tubes, which pipes form the hand rail within the car.

It is not necessary that this precise arrangement of parts
260 should be maintained, as the chief parts of the invention is
the combination of car door and cords by which the driver
may open and close the door at pleasure.

The invention also comprises other arrangements and devices for operating the car doors not necessary to describe now in detail, as the invention is, broadly, for operating the door of a street car by the driver through the medium of cord or equivalent, or lever, or machine cogs or rock shaft, including the various practicable combination of these kinds of mechanisms.

The weight of the pole when borne by the horses is apt to chafe their necks. Experience has shown that the standing pole as now in use is but a partial remedy, because of the difficulty of adjusting and keeping its outer end at the proper elevation. I remedy these defects by a simple and inexpensive device. The draw bar is of the usual kind, except a slight modification of the post under the draw bar in its junction with the draw bar, where the union is made behind the draw pin instead of before the pin, as formerly. The pole is provided with a brace stay and post, the lower part of which post is a polygon and the upper part round. On the lower part of this post is placed a flanged thimble fitting the polygon. The edge of the thimble is serrated, and the indentations are of different depths. The correct height of the outer end of the pole is instantly attained by raising that end to the desired height and sliding upward the flanged thimble to the round part of the post and then rotating the thimble until it finds an indentation of the proper depth to hold the pole adjusted as desired.

The invention also comprises a car of light construction, easily moved by one horse, and operated by the driver without a conductor. In this car the front platform is enclosed, and the rear platform forms also a step; is provided with a stern rail, as before described. The fare box is located in the front of the car, immediately behind the driver; the change gate is in the car door. The cash-box is located on the dasher rail immediately before the driver. A handle or lever is provided, as above described, by which the driver opens or shuts the door. A mirror is provided above the face of the driver, in which he sees the movements of passengers.

A system of bell signals is provided, as above described, by which the passengers while seated can communicate with the driver, and cards of instruction for directing passengers as to mode of pay.

Specification in pursuance of the conditions of the letters patent filed by the said Alexander Melville Clark in the Great Seal Patent Office on the 15th September, 1877.

Alexander Melville Clark, of 53 Chancery Lane, in the county of Middlesex, patent agent. "Improvements in tramway cars." A communication from abroad by John Stephenson, of New York city, in the county and State of New York, United States of America.

This invention consists of various improvements in tramway cars, which I will proceed to describe with the aid of the accompanying drawings.

(Here follow diagrams marked pp. 263, 264, 265, & 266.)

The first improvement relates to the brakes, and consists in an arrangement having for object to avoid the strain on the ends of the car and prevent them from being pulled down and the car from "hogging" when stopped suddenly by the application of the brakes. In this arrangement the four brake blocks are located between the two pairs of wheels (those usually employed on the outer or opposite sides of the wheels being dispensed with to afford room for the wheel guards, hereafter described) and diagonal stay bars are provided to prevent the brake blocks being displaced.

The improvement is illustrated in figures 1 and 2, which
261 represent a side elevation of a car with brakes attached and
a plan of the brake gear separately. The brake blocks A are suspended from the floor or under frame of the car so as to occupy their proper position near the wheels. The pairs of brake blocks are

respectively attached to the extremities of horizontal cross-bars A^1 A^1, which are connected at or about the middle of their length by adjustable eyebolts a and connecting rods a^1 to a horizontal lever, a^2, working on a pivot, a^3, at the middle of its length fixed under the floor of the car in the centre line of the vehicle. To the extremities of the lever are connected rods and chains a^4, which are wound upon their respective drums or reels a^5, at the end of the car, in order to apply the brakes by turning crank handles. a^6 a^7 are diagonal stay rods connected by their lower ends to the transverse bars A^1 and by their upper ends to the floor or framing of car.

By using brakes between the two pairs of wheels only I am enabled to provide wheel guards and scrapers, which serve to prevent injury to persons who may fall in front of the wheels, and also to clear the rails of dirt and other obstructions. This improvement is also illustrated in elevation on the left side in figure 1 and separately in plan in figure 3. Each guard and scraper consists of a steel plate, B, placed in a forwardly inclined position directly in front of the wheel and carried at the free end of an arm, b, to which it is attached by a sliding joint, b^1, so arranged that it may be adjusted at any desirable proximity to the rail, the said arm which is bolted by the other end to the axle box being curved to hold the scraper in its proper position directly in front of the wheel. The lower end of the scraper may have an adjustable piece of hardened steel for enduring service in scraping the rail.

A modified form of guard and scraper is shown at the other end of the car in figure 1 and separately in elevation in figure 4. B is the scraper at the lower end of a spring arm, b, attached at its upper end to the under side of the car platform, and thence extending diagonally downwards in such manner as to bring the lower end upon the rail. The contacting part or scraper B may be a piece of hardened steel fastened to the arm so as to be readily removable for repair or renewal, and it may be connected to the arm or guard b by a hinge joint, as shown, so as to readily trip on contact with a spike head, butt, joint, or other obstacle. The arm b should be of steel plate and so shaped as to lift the scraper from the rail until forced down by pressure upon a pedal, b^2, acting on one end of a lever, b^3, pivoted at the other end to the under side of the car frame and connected to the spring arm b by a rod, b^4.

The improvement in the end platforms, having for its object to prevent casualties, is illustrated in figure 5, which is a side elevation of a car. It consists in enclosing the driver's platform on all sides by carrying dash rail c and apron C in semicircular form, so that the ends of the dasher are connected with the body of the car at the front corners c^1. For the convenience of the driver a gate, C^1, may be arranged at one side of the platform, said gate and its top rail being hinged to the car at c^1 and forming a continuation of the dash rail and apron. With this arrangement it is necessary that the car should always proceed with this end forward, which may conveniently be done where the rails at their termini form circuits or are provided with turn-tables to enable the car to be turned round at the end of the journey. D is the rear platform of such car. It is at a lower level than the floor of the car, and thus forms a step between it and the ground, and is provided with a hand rail or guard for the protection of passengers entering or leaving the car, as shown in the end view, figure 6. Ordinary cars, which are hauled at either end alternately, may be provided with a pair of gates, C^1, to enclose the platform occupied by the driver for the time being, as shown in figure 1, hung by hinge pins c^1 to the body of the car, so as to be readily detached and transferred from the one end of the car to the other, as needed.

Another improvement relates to the lamp for illuminating the interior of the car. The improvement consists in the means for catching the overflow of oil from the lamp, and also preventing 262 any lateral movement of the lamp, and for supplying air for the support of the flame, whereby more perfect combustion and freedom from smoke and the effluvia of offensive oils are ensured. Figure 7 is an inside elevation and figures 8 and 9 vertical and horizontal sections respectively of the lamp box. The base of the lamp E has a downward projection, *e*, lodged in a corresponding cavity in the floor of the lamp box, the under side of this cavity being preferably closed by a metal or other dish ,e^1, for catching the drippings of the oil. F is a reflector behind the lamp, having an aperture containing the lens G for projecting the light beyond the car, and F^1 F^1 are two other lateral reflectors placed at suitable angles for reflecting the light within the car. The lamp box is enclosed by a door, E^1, and to ensure proper combustion the lamp box is supplied with air from the outside of the car through a number of ducts, e^2, or other inlets near the floor of the lamp box, the smoke from the lamp being discharged through a smoke-stack, E^2, rising from the apex of the lamp box through the roof of the car and terminating in a cowl. Within the smoke-stack and over the glass chimney is located a shield, e^3, so arranged as to prevent a down draught in the smoke-stack passing down the glass chimney. e^4 are fingers for supporting the shield.

Another improvement relates to a system of signal bells, whereby the passengers when seated may signal the conductor at whichever end he may be located without alarming the driver. This is shown in figure 1, and consists of three bell-cords, viz., a central one, H, running along the highest part of the roof, out of the passengers' reach, from one platform to the other, with a bell, *h*, at each end for the exclusive use of the driver and conductor, and two other bell-cords, H^1, running one at each side of the car along the lowest part of the roof, and provided with hand pulls or pendants H^2 within easy reach of the seated passengers, and connected each with a bell, h^1, at either end in such manner that the passengers' bells h^1 at the driver's end may be disconnected and those at the conductor's end only used for the time being.

Another improvement relates to the method of hanging the doors. The usual manner of running the doors is by sheaves or rollers at the lower edge travelling on a rail fixed on the car floor. The objection to this arrangement is that the rail is seldom free from obstructions, which impede the movement of the door. The improvement consists in hanging the door by sheaves running on or between overhead rails placed partly above the head of door frame and partly in a lower plane at one side of the door frame so as to avoid the car roof, as illustrated in figure 10. I is the door and *i i* the sheaves running on rails I^1 I^2 above and beside the door frame, respectively, and by which the door is hung. I^3 are guard rails, between which and the supporting rails I^1 I^2 the sheaves *i* are securely retained. The rails all droop slightly at the ends, so that the door rests on the floor at each end of its course, but is raised clear of it in moving from one position to the other.

When a car is managed by a driver without a conductor, it is desirable that the driver should be able to control the door at the rear end of the car, so as to open and close it at pleasure. This may be accomplished by various arrangements of mechanism constituting part of this invention. One of these, shown in figures 1, 5, and 11, consists of a rock shaft, K, mounted in bearings at the upper part of the car and extending from end to end, with an extension, K^1, beneath the bonnet over the driver's platform, connected to the shaft K by a universal joint, *k*, and provided with a lever handle, K^2, within convenient reach of the driver. At the rear end of shaft K a lever arm, K^3, figure 11, is fixed, the extremity of said arm being connected with the rear door I by a pin on the arm working on a slotted plate, k^1, attached to the door, whereby the door may be opened or closed by turning the rock shaft partly round by means of the handle. Though the passage of the rock shaft through the upper part of the car is the preferable mode, the connection between the hand lever and the door may pass under the seats or floor of the car or behind the backs of the seats, through which the power to operate the door may be transmitted by a lever or levers or an arm or arms, or through a rock shaft.

Another arrangement is illustrated in side and end elevation,
267 figures 12 and 13. In this case the door is not hung from the top, but has sheaves at bottom running on a rail on the floor as usual. *l* is a toothed rack-bar fixed to the bottom edge of the door (also shown separately), with which gears a cog-wheel, l^1, keyed on a longitudinal shaft, L, running beneath the car from one end to the other, and operated by a lever handle, L^1, on a vertical shaft at the front of the driver's platform, geared with shaft L by bevel wheels l^2.

Another arrangement is shown in plan and end elevation in figures 14 and 15. This is suitable for cars running either end foremost. In this case there are two shafts L, each operated directly by a handle, L^1, at one end and having an arm fixed on the other end carrying a toothed segment, L^2, which gears with a toothed rack, *l*, fixed to the door as shown. The handles L^1 of the two shafts are at opposite ends of the car, the one being used for working the door at one end and the other for that at the other end.

Another arrangement is shown in plan, figure 16, and end elevation, figure 17. It consists of cords M attached to the door I and passing round pulleys *m* at the angles of the circuit and extending within reach of the driver at M^1, so that he may open or close the door at pleasure. The cords pass through tubes M^2, which form the hand rail under the roof of the car. The pulleys m are enclosed in cases to keep the cords upon them.

Figures 18, 19, 20, 21, 22, 23 show various other arrangements of cords, rods, and levers for enabling the driver to operate the sliding door (whether curved or straight) at the rear of the car, which will be readily understood from the drawings without detailed description.

Another improvement relates to the pole bar, and consists in an adjustable support whereby the height of the pole may be varied to suit the horses. Experience has shown that the weight of the pole when borne by the horses is apt to chafe their necks, and the pole now in use is open to objection because of the difficulty of adjusting and keeping its outer end at the proper elevation. I remedy this defect by means of a simple device shown in figure 24.

The draw bar N is of the usual kind, except a slight modification of the post N^1, which projects down from the draw bar N from a point behind the draw pin n instead of in front thereof, as formerly. The pole P has a brace stay, P^1, supporting a post, p, the upper end of which is round and the lower end polygonal. Upon the latter is fixed a plate, R, whose edge is serrated, the indentations r therein being of different depths. The correct height of the outer end of the pole is instantly attained by raising that end to the desired height and sliding upward the plate R to the round part of the post p and then rotating the plate until an indentation, r, of the proper depth comes opposite to post N^1; then the plate is lowered and the indentation bears against the post N^1 to hold the pole at the proper height.

Having described the nature of the said invention and the manner of performing the same, I declare that what I claim as the invention to be protected by the hereinbefore in part recited letters patent is—

1st. The combination of the brake blocks and bars A A^1 with the actuating horizontal lever a^2, connected to said bars by short connecting rods a^1, the whole being suspended between the two pairs of wheels of a tram car, so that the power may be transmitted by a push motion when through the connecting rods to the bars and brake blocks, substantially as specified.

2nd. Connecting the cross-bars A^1 by diagonal stay bars a^7 with the bottom of the car body to deprive said bar of end motion, as described.

3rd. The improved combined wheel guards and scrapers, arranged and applied substantially as herein shown and described.

4th. Enclosing the driver's platform on all sides by the dash-rail apron and door connected to the body of the car, substantially as described, and shown in figure 5.

5th. Providing the platform of ordinary cars with a pair of doors and their attachments, whereby the doors may be transferred from the one platform to the other, substantially as shown and described.

268 6th. In combination with the lamp chamber of a tram car cut off from atmospheric communication with the in-

[illegible] The [illegible] the [illegible]
[illegible] to keep the [illegible] in position.

Figures 17, 18, 19, 20, 21 and 22 show various forms of [illegible] and [illegible] for enabling the [illegible] [illegible] be readily [illegible]

Another improvement [illegible] to the [illegible] may be [illegible] and [illegible] when [illegible] by the [illegible] now in use [illegible] and [illegible] at either end of the [illegible] as shown in figure 3.

The [illegible] of the post [illegible] The [illegible] point behind the [illegible] The post [illegible] has a [illegible] of which is [illegible] the lower [illegible] being [illegible] different [illegible] The [illegible] the post [illegible] height and [illegible] post [illegible] and the [illegible] proper [illegible] and the [illegible] proper height.

Having described [illegible] manner of [illegible] invention [illegible] patent [illegible]

1st. [illegible]

2d. [illegible] the [illegible] as set forth.

3d. [illegible] the [illegible] tied.

4th. The [illegible] raised and [illegible] substantially as [illegible]

5th. [illegible] apron and [illegible] the [illegible] as shown in figure [illegible]

6th. [illegible] doors and [illegible] from the one [illegible] to the other [illegible] described.

7th. [illegible] in combination with the [illegible]

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T. CORRIGAN.
Shutter-Worker.

No. 202.413. Patented April 16, 1878.

No 304
Aron
v
MRyCo
p 269

Fig. 1.

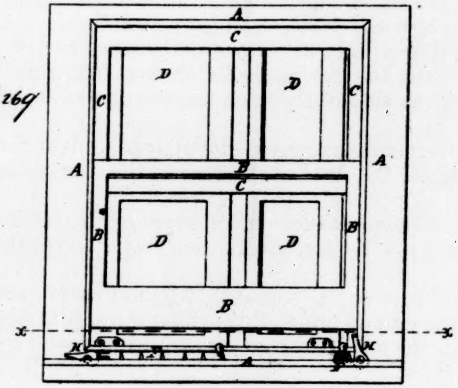
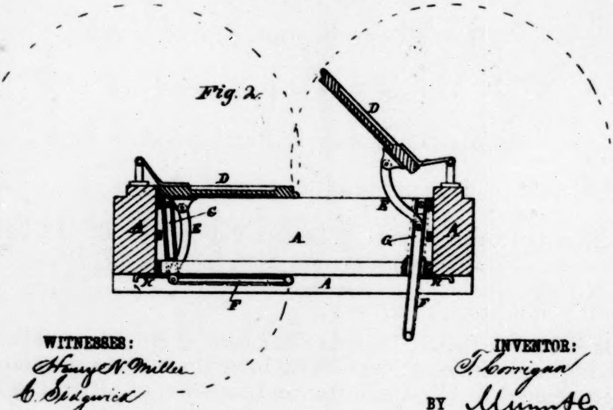


Fig. 2.



WITNESSES:

Henry N. Miller
C. Sedgwick

INVENTOR:

T. Corrigan

BY Munn & Co

ATTORNEYS.

terior of the car and provided with a smoke-stack, one or more ducts, channels, or openings leading from the atmosphere outside the car to the interior of the lamp chamber, substantially as and for the purpose set forth.

7th. A lamp box of a tram car provided with a cavity in its floor and a dish or receptacle for the oil drip of the lamp, substantially as set forth.

8th. The combination, with the lamp chimney and the smoke-stack of the lamp box, of the shield, substantially as and for the purpose specified.

9th. The system of signal bells and cords for passengers' use, illustrated in figure 1, for signalling the conductor without alarming the driver, substantially as shown and described.

10th. Hanging the car doors by sheaves running on fixed rails above and at one side of the door frame, substantially as shown and described.

11th. The several arrangements of mechanism for enabling the driver to operate the door at the rear of the car, substantially as set forth.

12th. The adjustable device for supporting the pole at different heights to suit the horses, substantially as described, and shown in figure 24.

In witness whereof I, the said Alexander Melville Clark, have hereunto set my hand and seal this fifteenth day of September, in the year of our Lord one thousand eight hundred and seventy-seven.

A. M. CLARK. [L. S.]

(Here follows diagram marked p. 269.)

270

UNITED STATES PATENT OFFICE.

THOMAS CORRIGAN, of Brooklyn, New York.

Improvement in Shutter-Workers.

Specification forming part of Letters Patent No. 202,413, dated April 16, 1878; application filed February 7, 1878.

To all whom it may concern:

Be it known that I, Thomas Corrigan, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful improvement in blind adjuster and fastener, of which the following is a specification:

Figure 1 represents a window to which my improvement has been applied, the lower sash being shown as partly raised. Fig. 2 is a horizontal section of the same, taken through the line x x, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device the use of which will enable the blinds to be opened, closed, adjusted at any desired angle, and securely fastened in the various positions without its being necessary to raise the sash, and which shall be simple in construction, convenient in use, and reliable in operation.

The invention consists in the novel combination of the curved bars, the sliding jointed bars, the slides, and the eccentrics with each other, and with the blinds and the casing of a window, as hereinafter more fully described and claimed.

A represents the casing, B the lower sash, C the upper sash, and D the blinds, of a window, about the construction of which parts there is nothing new.

To the lower parts of the blinds D are pivoted the outer ends of the curved bars E, the inner ends of which are pivoted to the jointed bars F at their joints. The bars F slide in grooved slides G, let into the window-sill, and passing in through the lower part of the casing.

The joints in the sliding bars F are made near their rear ends, and in such positions that the forward and main parts of the said bars F, when the blinds D are fully closed, may be turned along the inner side of the lower part of the casing A, as shown in Figs. 1 and 2, the outer and smaller parts of the said bars F remaining in the slides G, to serve as guides to the said bars E.

In the edge of the bars F are formed notches, to receive the edges of the eccentrics H, which are pivoted to the casing A, so that the said bars E may be securely held in any position into which they may be adjusted.

By this construction, by operating the sliding bars F, the blinds D may be closed and opened to any desired extent without its being necessary to raise the sash B.

I am aware of shutter-workers consisting, essentially, of sliding handled bars attached to the shutters and extending through the window-frame, and combined with means for locking the shutter in a fixed open or closed position, and such are not broadly claimed.

Having thus described my invention, I claim as new and desire to secure by letters patent—

The combination of the curved bars E, the sliding jointed bars F, the slides G, and the eccentrics H with each other, and with the blinds D and the casing A of a window, substantially as herein shown and described.

THOMAS CORRIGAN.

Witnesses:
JAMES T. GRAHAM.
JAMES H. HUNTER.

(Here follows diagram marked p. 271.)

271

J. KELSO & W. H. LUDEWIGS.

Shutter-Worker.

No. 212,012. Patented Feb. 4, 1879.

No 304
Aron
&
Mr Co } p. 271

Fig. 1.

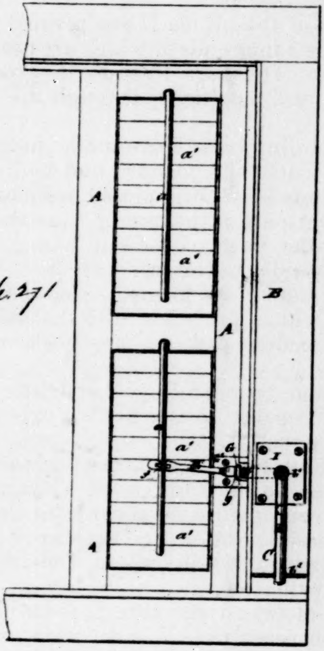


Fig. 2

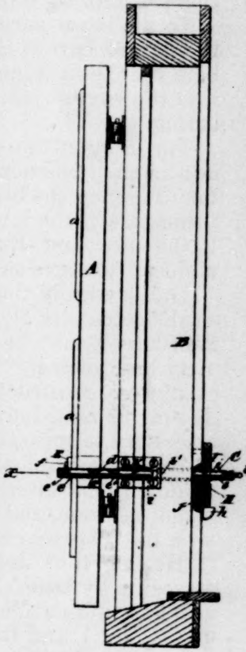


Fig. 4.

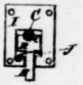
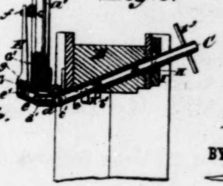


Fig. 3.



WITNESSES:

Francis McArdle.

C. Sedgwick

INVENTOR:

W. H. Ludewigs
Kelso

BY Munn & Co

ATTORNEYS.

JOHN KELSO and WILLIAM H. LUDEWIGS, of Lowden, Iowa.

Improvement in Shutter-Workers.

Specification forming part of Letters Patent No. 212,012, dated February 4, 1879; application filed April 27, 1878.

To all whom it may concern:

Be it known that we, John Kelso and William H. Ludewigs, of Lowden, in the county of Cedar and State of Iowa, have invented a new and improved device for operating window-blinds, of which the following is a specification:

The object of our invention is to furnish a simple and effective device whereby window-blinds may be opened and closed, locked and unlocked, and the blind-slats turned in any desired position from the inside of the window-frame or wall without making it necessary to open the window.

The invention consists in a flexible jointed bar fitted to slide and turn in a hole running diagonally through the wall or window-casing, and connected by an arm to the slat-rod of the window-blind, in combination with an inside spring-bolt engaging in notches in the bar to lock the blind in position, as will be hereinafter described.

In the accompanying drawings, figure 1 represents an inside face view of a window and blind provided with my operating device, and locked in the position of being closed. Fig. 2 is an edge view of the same with the blind open, the window-casing being shown in vertical section. Fig. 3 is a horizontal section on the line x x of Fig. 2, the blind being fully open and locked. Fig. 4 is a detail view of the locking device.

Similar letters of reference indicate corresponding parts.

A is the window-blind, and a the rod which connects together the blind-slats a'. B is the side or casing of the window. C is a metallic bar fitted to slide in a hole through the window-casing, and made flexible by being composed of horizontal joints or pieces b c d e, hinged together by the horizontal pin b^1 and the vertical pins c' d', and its inner end, on the inside of the wall, is provided with a handle, b^2, for pushing, pulling, and turning the bar C. The outer end of the bar C issues from the hole in the window-casing between the blind-hinge and the window-sash, and the last outer joint, e, is hinged by a vertical pin, e', to one end of an arm, E, the other end of which is slotted and connected to the slat-rod a by a pin or screw, f, going through the slot into the rod a, the said pin f being headed to prevent the arm E from slipping off. Near the hinge or pivot e' the arm E is reduced in size, forming a neck, g, over which a staple, G, is inserted in the frame of the blind, or attached to a plate, G', fastened to the said frame, to hold the arm E to the latter, while allowing for sufficient oscillating motion of the neck g in the staple G to open and close the blind-slats a', when the blind is in either of the positions shown in the drawings, by turning the bar C on its axis by the handle b^2.

The length of the joints *b c* of the flexible bar C is so adjusted in proportion to the length of its sliding motion and to the length of the other joints, *d e*, that when the blind A is closed the joint *b* may be turned down on its hinge b^1, so as to be pendent against the wall, (or casing B), as shown in Fig. 1, and thus be out of the way. When the blind A is fully closed, and when it is fully opened, it is firmly locked in either of the said positions by a flat bolt, H, fitted to slide in a suitable recess in the plate I, through which the bar C enters on the inside of the wall or casing B, said bolt H being thrown into a notch, *i*, in the bar C by the action of a spring, J. If it be desired to lock the blind in any other positions than those indicated, other notches *i* may be cut in the bar C in suitable places for that purpose. When it is desired to unlock the blind the bolt H is withdrawn from the notch *i* by the handle *h* against the pressure of the spring J. At the point of the casing through which the bar C issues a metal plate, K, is attached for the bar to slide through, so as to better resist wear. If desired, the hole in the casing through which the bar C slides may be lined with metal.

From the foregoing description it will be seen that by this invention not only is the blind opened and closed, and automatically locked in either position, but the blind-slats are turned to admit or shut out the light, all by simply pushing or pulling or turning the bar C by the handle b^2, without making it necessary to raise the window-sash.

We do not limit or confine ourselves to the exact form or arrangement of any of the parts shown in the drawings, as they may 273 be varied or modified to suit the constructer and the different applications for which the device may be used without departing from our invention.

Having thus fully described our invention, we claim as new and desire to secure by letters patent—

The flexible jointed bar C, fitted to slide and turn in a hole running diagonally through the wall or window-casing B, and connected by the arm E to the slat-rod *a* of the window-blind A, in combination with the inside spring-bolt, H, engaging in notches *i* in the bar C, substantially as shown and described, and for the purpose set forth.

JOHN KELSO.
WILLIAM H. LUDEWIGS.

Witnesses:
M. L. BANKS.
W. C. HOSKINS.

(Here follows diagram marked p. 274.)

O. FERGUSON.

Gate.

No. 219,852. **Patented Sept. 23, 1879.**

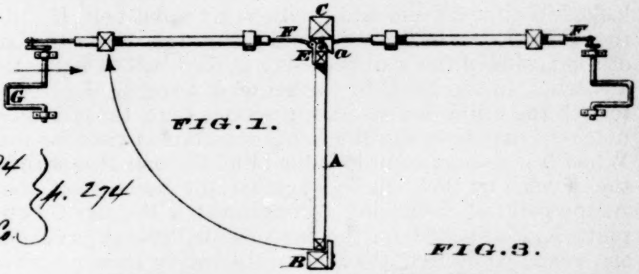


FIG. 1.

No. 304
Aron
M. Ry. Co.
} p. 274

FIG. 2.

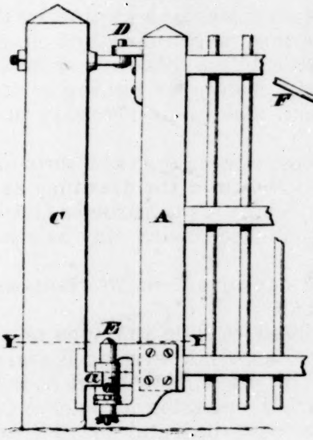


FIG. 3.

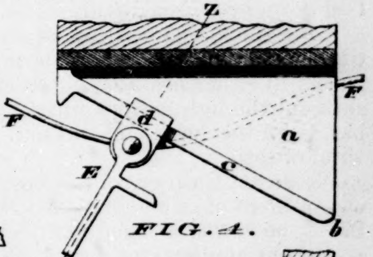
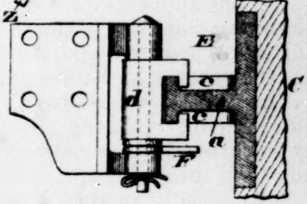


FIG. 4.



Attest.
Arthur Shue
Jeremiah F. Dooling

Inventor.
Oliver Ferguson.
By John Hatch
Atty.

275

UNITED STATES PATENT OFFICE.

OLIVER FERGUSON, of Milton, Indiana.

Improvement in Gates.

Specification forming part of Letters Patent No. 219,852, dated September 23, 1879; application filed January 3, 1879.

To all whom it may concern:

Be it known that I, Oliver Ferguson, of Milton, Wayne county, Indiana, have invented a certain improvement in automatic farm-gates, of which the following is a specification.

My invention relates to an improvement in farm-gates that are made to open and close automatically by changing the angle at which the gate hangs, the change being usually made by a rod communicating power applied by a vehicle-wheel as it passes over a curved lever in the usual manner.

The especial matter that I regard as new and useful, and which I desire to cover by this patent, is the peculiar construction of the hinge through which the motion of the lever is communicated to the gate, and whereby the angle of the gate is changed.

In the drawings, figure 1 is a plan view of the gate and attachment ready to be opened. Fig. 2 is a side elevation of the gate and hinge. Fig. 3 is a horizontal section taken through the line *y y* of Fig. 2, showing the incline of the hinge. Fig. 4 is an enlarged view of the hinge at the lower part of the gate, whereby a change of angle is communicated.

In the drawings, A represents a gate, made in any convenient manner; B, the post against which the same closes; C, the post to which the same is secured by means of the upper hinge, D, and the lower hinge, E. F is the rod communicating power to the lower hinge, which is here shown as passing through a supporting-tube in the manner described and claimed in an application filed at about the same time with this by Linville Ferguson, and by him assigned to me. G is the curved lever against which the wheel is applied to communicate power in the usual manner.

In Fig. 4 the hinge E is shown in full. It consists of three simple castings and the bolt. The principal feature is the harp-shaped slide or incline *e*. The backing of this is secured to the post, as shown, and from the front projects a harp-shaped part or incline, *b*. (Shown more distinctly in Fig. 3.)

Upon the front edge of the incline *b*, I have shown two flanges—an upper and lower one. (Marked *c c*.)

The part of the hinge *d* is made of a piece of metal, with an ordinary hole for the bolt to connect it with that part of the hinge which is attached to the gate, and shown more particularly in Fig. 4, and the front part of the piece is made with two overhanging projections or lips, that close over the flanges *c c*, respectively, and the piece *a*. When this piece *d* is attached to the part connecting it with the gate, and is placed in position overlapping the flanges *c c*, it will be observed that, as the top hinge, D, is stationary, if the part *d* of the lower hinge is brought back about midway of the incline *e* the gate will be in a position of equilibrium, while if the slide *d* is brought to the acute angle the gate is tilted to such an angle that it will close, and if the slide *d* is pushed out to the outer end of the incline *a* the gate will be tilted at such an angle that it will open.

To slide the lower part of the gate, power is communicated through the rods *f f*, one on either side, which, being attached to the down-levers *g g*, operate the gate from a distance by means of the advancing vehicle or by power applied in any other way.

The advantages of this peculiar formation of the hinge are the extreme simplicity of its construction, which makes it cheap, and at the same time prevents it from getting readily out of repair; also, by its construction it is not liable to become obstructed by dirt or other foreign matter accumulating on the parts thus used.

I do not claim to have been the first to have made a hinged gate opened and closed by gravity, as this has been accomplished in many different ways; nor do I claim moving the lower hinge or pintle obliquely to the post, as I am aware that said pintle has been arranged to slide and turn in an obliquely-slotted plate—an arrangement which is objectionable, because the sliding action causes the pintle to wear away rapidly on one side and throw the gate out of position, and because the slot becomes filled with snow and ice, so as to prevent the gate from moving.

I am also aware that it is old to sustain the gate by a roller running on an inclined track or rail upon the ground, and this I do not claim.

276 I do not claim to be the inventor of the tubular rod-support shown in the drawings, and hereby admit Linville Ferguson to be the first and original inventor thereof; but

What I do claim is—

1. The triangular bracket having at one side a base for application to the face of the fence-post, and at the other side the flange *c*, in combination with the sliding block *d*, constructed and arranged to slide upon said flange, as shown.
2. The combination of the post, the triangular overhanging plate secured to the post above the ground and provided with the flanged edge *c*, the block sliding upon and sustained by said edge, and the hinge-plate E, connected by a pin to the sliding block.
3. In combination with the inclined plate *a* and sliding block *d*, the actuating-rods F, the hinge-plate E, embracing the rods and the blocks, and the pintle or hinge-pin connecting the rods, the hinge-plate, and the slide, as shown.

OLIVER FERGUSON.

Witnesses:
JEREMIAH F. TWOHIG.
ERNEST H. RYDELL.

(Here follow diagrams marked pp. 277, 278, & 279.)

277

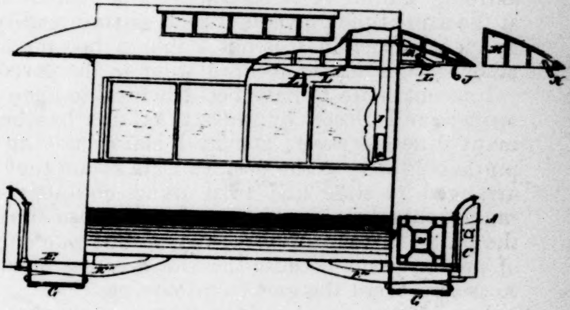
3 Sheets—Sheet 1.

J. STEPHENSON.

Tram Car.

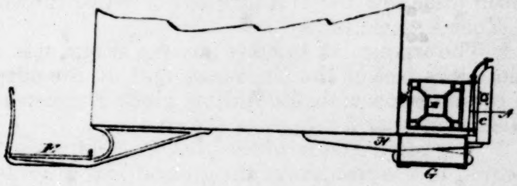
No. 235,311. **Patented Dec. 7, 1880.**

Fig. 1.



No. 204.
Aron
v.
M Ry Co.
} p. 277

Fig. 2.



Witnesses.
F. L. Ourand
Alex Mahon

Inventor
John Stephenson
by A. M. Smith
Attorney

3 Sheets—Sheet 2

J. STEPHENSON.

Tram Car.

No. 235,311. Patented Dec. 7, 1880.

No. 3024
Aron
v
M. Ry. Co. } p. 278

Fig. 3.

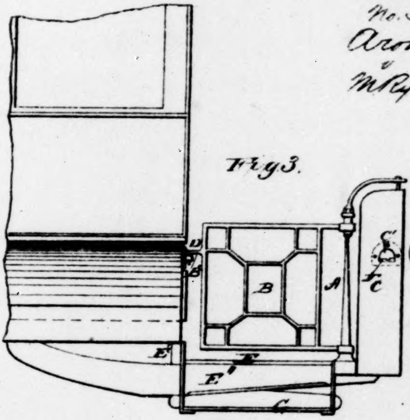


Fig. 6.

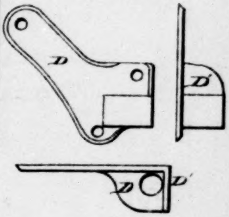
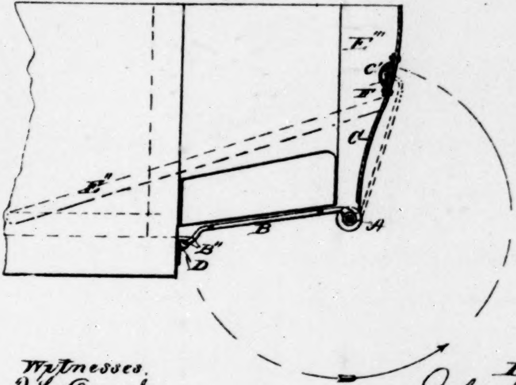


Fig. 4.



Witnesses.
P. L. Durand
Alex Mahon

Inventor
John Stephenson
by A. M. Smith
Attorney

3 Sheets—Sheet 3.

J. STEPHENSON.

Tram Car.

No. 235,311. Patented Dec. 7, 1880.

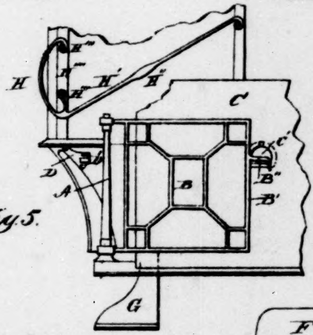


Fig. 5.

No 304
Aron v M Ry Co } p. 279

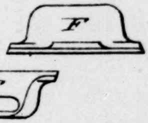


Fig. 9

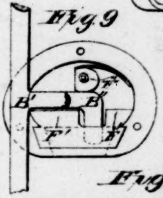


Fig. 7.

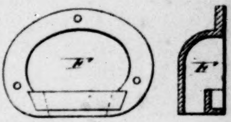
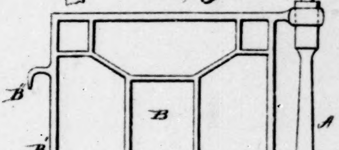


Fig. 8.



Witnesses.
F. L. Ourand
Alex Mahon

Inventor
John Stephenson
by A. M. Smith
Attorney

UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, of New York, N. Y.

Tram-Car.

Specification forming part of Letters Patent No. 235,311, dated December 7, 1880; application filed November 8, 1879.

To all whom it may concern:

Be it known that I, John Stephenson, of the city, county, and State of New York, have invented certain new and useful improvements in tram-cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a side elevation, partly in section, of a tram-car with my improvements applied. Fig. 2 is a similar view, partly broken away, showing the improved gate at the forward end, and the depressed step-platform at the rear end. Fig. 3 is an enlarged side elevation of one end of the car, showing the improved gate for closing the platform. Fig. 4 is a partial plan view of the same. Fig. 5 is a partial front elevation with the gate open, showing, also, the hand and grab rail, hereinafter described. Fig. 6 shows an enlarged plan view and front and side elevation of the eye or socket plate for locking the gate in its closed position. Fig. 7 shows similar views, and also a sectional view, of the pocket or receptacle for the gate hook or latch for holding the gate open detached from the dash; Fig. 8, a side elevation of the corner standard or pillar of the dash forming the gate-pivot, showing the manner of hanging the gate thereon, and Fig. 9 shows the receptacle in the dash for the gate-hook and the means for locking and releasing the hook.

Similar letters of reference denote corresponding parts wherever used.

The invention consists in employing corner-pillars on the dash of a tram-car as pivots upon which to hang gates having a capability of movement to and from the corner-posts of the car for closing or opening the platform, and in novel means for holding the gate in either position.

It further consists in a novel construction and arrangement of hand-rails for giving increased security in entering and leaving the car, and in certain details of construction and arrangement hereinafter described.

The system of conductorless cars for tramways is rapidly spreading, and the use of "double-ender" cars for such purpose has developed a new class of wants. Open platforms to such cars are objectionable, not only because most of the serious accidents occur to persons falling from the front platform, but the driver of such car should be secluded, that his undivided attention may be given to the multifarious requirements of his position; consequently some ready method of closing the platform which for the time being is in front is necessary.

Gates in various forms have been used, some made portable to be carried from one end of the car to the other. This requires labor incompatible with the duties of the driver of such car. Other gates have been hinged at the corner of the body, to fold, when open, against the end of the car or the inner side of the dash. This is found objectionable, as placing the gate in a position obstructing the ingress and egress of passengers.

My invention avoids these difficulties, and for this purpose I modify the corner standards or pillars A of the dash C, adapting such pillars to act as pivots, on which I hang the gates B, and around which said gates swing.

The lock-stile B′ of the gate is provided with a hook, B″, of proper form to enter an eye, D, at the corner of the body, the eye having at its farther side a lug or stop, D′, to prevent the gate-hook from passing beyond the eye. This connection secures the gate in position to close the platform, and when the platform is to be left open the gate is swung around against the front of the dash, and the hook referred to enters a pocket or receptacle, F, in the dash, and the gate is thus held open.

The receptacle for the gate-hook is formed by making an opening in the dash-apron, through which the hook is projected, and the hook is covered by a cap fastened to the inner side of the apron. To prevent noise or wear a piece of india-rubber, F′, is secured within the receptacle in such manner that the hook and the weight of the gate rest upon it. This method of fastening the gate open, while regarded as the best, is not the only way, as an eye secured to the front of the dash, or other suitable device for holding the gate-hook, may be employed; but it is desirable to avoid having projections on the dash-apron, which might come in contact with and injure the horse.

281 To prevent mischievous persons from unfastening the gate and allowing it to swing around loose, the receptacle F for the gate-hook may be provided with an eccentric, F″, bolt, or other suitable device for locking the gate-hook in place, said device being adapted to be operated by the driver for releasing the hook, when desired.

The absence of a conductor to assist infirm persons, ladies, and children makes it important that the platform of the car be within convenient distance of the ground, so that the intervening step may be easy. I accomplish this by blocking down the bearers E″ by means of a transverse strip, E′, interposed between said bearers and the end sill of the car, said strip filling the space between the end sill and the platform-flooring E, and preventing injury to the feet of the passengers. Increased strength with diminished weight is given to the construction by spreading the bearers under the car in such manner that the ends under the car-floor shall be wider apart than the ends at the nose-piece or outer verge of the platform. The ends under the car-body are, by preference, bolted directly to the side sills of the car, but there is advantage in any degree of approximation thereto.

When the platform is constructed and arranged as described the distance of the platform from the ground is so diminished as to permit the employment of a single intervening step, making but two intervals, short and easily accomplished, while at the same time keeping the platform up so near the level of the car-floor as to obviate danger to persons leaving the car without observing that the platform is depressed.

To assist persons ascending to or leaving the platform, I apply a grab-handle at the corner of the car, having a vertical member, H, of such form as to be easily grabbed, and from the lower end of this grab-handle I project another member, H′, ascending at a suitable angle to the door-standing pillar near the belt-rail. This forms a hand-rail on which the hand of the passenger can rest in ascending and descending. Upon this hand-rail, about midway between its ends, is formed a collar, bulb, or enlargement, H″, which affords a resting-place for the hand, beneficial in ascending and descending. The grab-handle thus made is fastened to the car-body through two feet, H‴ H‴, located on the panel-plate over the corner pillar, H⁗, into or through which the retaining screws or bolts are passed, and similar fastenings serve to secure the inner end of the handle to the door-standing pillar or belt-rail, a firm support for the handle being thus obtained at both ends.

The car is provided with mechanism enabling the driver to open and close the rear door, said mechanism, in the present instance, being arranged in the top of the car.

J represents a lever, arranged in the forward part of the hood or bonnet M, and connected by a rock-shaft and crank-arm, or other suitable means, with the door at the opposite end of the car, for operating it.

L is a bell (shown arranged in the hood) operated through a strap, L′, passing lengthwise at the side of the car, and a series of bell-pulls, L″, arranged upon the frame posts or uprights of the car-body, as shown, and within convenient reach of the passengers in their seats.

K represents a mirror, arranged under the hood or bonnet in advance of the driver, made adjustable, that it may be set at a suitable angle to enable the driver to observe the movements of the passengers without necessitating his turning around for that purpose.

As the features of arrangement of parts last above referred to are made the subject-matter of another division of this application, they need not be described in detail here.

I is a box for the reception of fares, said box being of any usual or preferred construction and arrangement.

Where the car is to be drawn always with the same end in advance, it may sometimes be preferred to use at the rear end of the car what I term a "depressed-step platform," such as shown at O, Fig. 2, in lieu of the one above described. In this case the usual side step or steps are dispensed with, the platform itself being depressed by means of angular bearers, as shown, in such manner as to divide the distance between the car-floor and the ground. This depressed platform is provided at its rear end with a dash or projecting hand-rail, so arranged that passengers leaving the car step down first upon the platform, and turning thence to one side or the other, step from said platform to the ground at one side of the car, the platform extending laterally to or beyond the tramway or track. This arrangement serves to insure safety to near-sighted persons and passengers leaving the car in the night-time, and failing to notice that the platform is depressed, this having been found a source of accident where only an ordinary step is used between the car-floor and the ground.

Parts of the car not particularly described may be constructed and arranged in any usual or preferred way.

Having now described my invention, I claim—

1. A tram-car with end platforms, having the dash corner pillars made in proper form and arranged as pivots, on which are hung gates having a capability of motion from the corner of the body to the dash.

2. A tram-car with gates hung on the dash corner pillars, around which the gates rotate.

3. A tram-car with gates hung on the dash corner pillars, around which the gates rotate from the corner of the car-body to the front side of the dash.

282 4. A tram-car with gates hung on the dash corner pillars, on and around which the gates rotate, the lock-stile of the gates being provided with hooks lodged in eyes at the corners of the body.

5. A tram-car with gates hung and pivoted on the dash corner pillars, and the hook on the lock-stile lodged in an eye near the corner of the body, the eye being provided with a stop or fence, to prevent the gate from passing through and beyond the eye.

6. A tram-car with gates pivoted on the dash corner pillars, the lock-stile of the gate having a hook for fastening the gate open or shut.

7. A tram-car with gates pivoted on the dash corner pillars, and with a stile-hook fastening the gate shut when in union with an eye at the corner of the body, or fastening the gate open when it is folded against the dash, with the hook passing through an orifice in the dash.

8. A tram-car having gates for closing the platforms, the gates, when open, folding against the dash, and the stile-hook of the gate passing through the dash-apron and fastening the gate, the gate-hook being capped or having a receptacle covering the hook.

9. In a tram-car, the combination of the gate-hook, receptacle, and india-rubber, substantially as described.

10. In a tram-car, the combination of the gate-hook, receptacle, and cam, bolt, or other suitable device forming a lock to prevent improper loosening of the gate.

11. A tram-car provided with an inclined hand-rail, having at some convenient place between its ends a collar, bulb, or enlargement for greater security of the hand-gripe.

D. R. HART.

Device for Operating Street-Car Doors.

No. 163,770. Patented May 25, 1875.

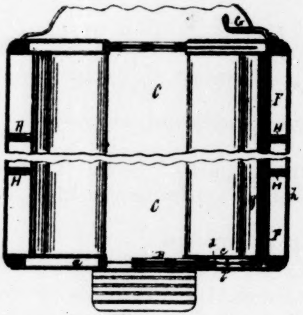
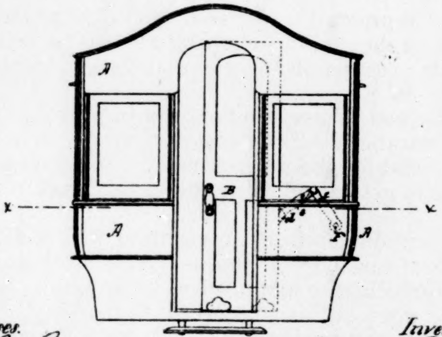


Fig. 2.

No. 304
Aron
v
M Ry. Co. } p. 283

Fig 1.



Witnesses.
D. G. Stuart
L. Van Rienzaf

Inventor
Daniel R. Hart
per
P. Hannay
Attorney

In testimony whereof I have hereunto set my hand this 3d day of November, 1879.

JOHN STEPHENSON.

Witnesses:
STUART A. STEPHENSON.
JOHN S. PUGH.

(Here follows diagram marked page 283.)

284 UNITED STATES PATENT OFFICE.

DANIEL R. HART, of St. Louis, Missouri.

Improvement in Devices for Operating Street-Car Doors.

Specification forming part of Letters Patent No. 163,770, dated May 25, 1875; application filed May 1, 1875.

To all whom it may concern:

Be it known that I, Daniel R. Hart, of St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful improvements in the mode of operating street-car doors; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a rear-end view of a car having my improvement applied thereto, the running-gear being removed; and Fig. 2, a horizontal section of the same as taken through the line *x x* of Fig. 1.

My invention relates to a new and improved method of operating the rear entrance-door of street-cars by the driver while at his post in front, by which the devices used are made more simple, less costly and liable to get out of order, and more direct in their action on the door.

The invention consists in combining, with a sliding rear entrance-door and a car-body, a simple toggle-lever and crank-shaft, the handle of which is so arranged as to be within convenient reach of the driver when on his platform in front.

To enable others skilled in the art to make, construct, and use my invention, I will now proceed to describe it in detail, omitting a particular description of such parts of a street-car as are non-essential to a full understanding of my improvement.

The body A of the car may be of any suitable construction, so long as its rear end is so made as to provide a supporting-rail and guideways for a sliding door, B. For this purpose, however, I prefer that end to be made double, so as to furnish a channel or way within which to slide back and forth. Such channel or way is shown at *a*, Fig. 2, it lying between the outer wall *b* and inner casing *c*. To the inner edge of the door B, at a suitable distance above the floor C of the car, is secured a lug, *d*, to which is pivoted a lever, *e*, which forms one arm of the toggle-lever, the other arm of which consists of a crank-lever, *f*, keyed or otherwise secured to the rear end of the rock-shaft F, and on the other end of which, on the outside of the front end of the car, is secured the crank-handle or lever G, by which the driver operates the rock-shaft F, and through it the toggle-levers and the door.

Crank-lever *f* and lever *e*, which form the toggle-lever, are arranged to operate in the channel-way of the door formed by the outer wall *b* and inner casing *c*.

Rock-shaft F, like the levers *e* and *f*, is also arranged within the walls of the car-body—that is to say, between the side casing *g* and outside wall *h* of the car-body—it for this purpose being mounted in suitable bearings secured to, or formed in, the pillars H, and in the front and rear end walls of the car.

Thus arranged, both the rock-shaft and levers are entirely out of the way of the passengers, and may, if desired, be connected to the door, either at its upper or lower end; but the arrangement shown in the drawing is preferred, as it is far more convenient to the driver to handle, and, besides, imparts a more steady and uniform motion to the door.

In this patent I do not claim the broad combination of a crank, rock-shaft, entrance-door, and connecting device; but

What I do claim is—

The combination of the rock-shaft F and its operating lever or handle with the toggle-levers *e* and *f* and the sliding entrance-door of a street-car, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

DANIEL R. HART.

Witnesses:
D. G. STUART.
P. HANNAY.

(Here follows diagram marked p. 285.)

286

UNITED STATES PATENT OFFICE.

SAMUEL H. LITTLE, Rosemond, Illinois.

Improvement in Street-Railway Cars.

Specification forming part of Letters Patent No. 140,052, dated June 17, 1873; application filed January 29, 1872.

To all whom it may concern:

Be it known that I, Samuel H. Little, of Rosemond, Christian county, Illinois, have invented a certain improvement in street-cars, of which the following is a specification:

This improvement relates to the manner of constructing, hang-

285

S. H. LITTLE.

Street Railway Cars.

No. 140,052

No. 304
Aron v. M. Ry. Co. } p. 285

Patented June 17, 1873.

Fig. 1.

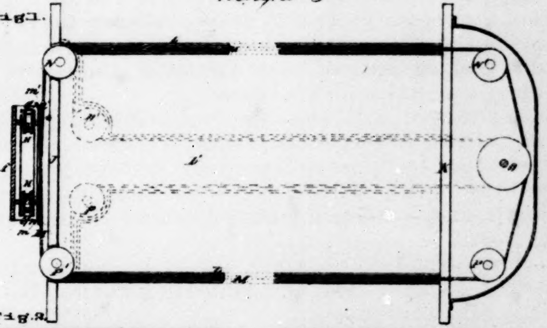
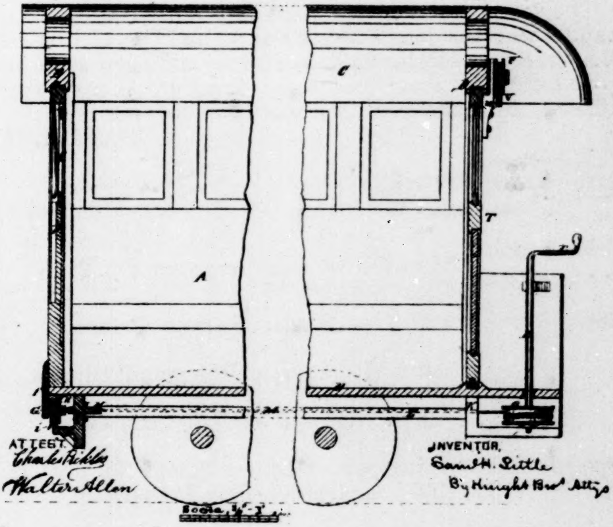


Fig. 2.



ATTEST.
Charles Pickles
Walter Allen

INVENTOR,
Saml H. Little
By Knight Bros Attys.

ing, and operating the doors of street-railway cars. The first part of my invention consists in the manner of supporting the rear door of the car. This door rests on pulleys upon a track beneath the floor of the car, so that no dirt will collect upon the track from the feet of persons entering. The second part of my invention consists in the manner of moving the door by cords that pass from the bottom of the door around pulleys and to a drum beneath the feet of the driver, the door being outside the rear wall and opening to either side.

Figure 1 is a plan of the pulleys and the cord by which the rear door is operated. Fig. 2 is a longitudinal section at the center of the car.

A (Fig. 2) is the side-wall, B the floor, C the roof, D the front wall, and E the rear wall. F is the rear door, whose top slides in a groove, *e*. At the bottom of the door is a bracket, *f*, to which is attached a rectangular frame, G, to which the grooved rollers H are journaled. This frame is beneath the floor, and the rollers H travel on a rail, *i*, upon a bracket, I, secured to the cross-timber J, the latter being connected to the cross-timber K (at the front of the car) by trunks or pipes L, forming guides and supports for the cord M. The end *m* of the cord is attached to one end of the frame G, and, passing around the pulleys N and N′, it is coiled around the drum O, or attached thereto, and from the drum the cord passes around the pulleys P and P′, and the end *m′* is attached to the frame G at the opposite end to that *m*, so that, supposing the door to be closed, it is opened by turning the drum J in either direction. The drum is upon a shaft, R, ending above in a hand crank, *r*, by which the driver turns the drum.

In dotted lines in figure 1 is shown a modification, in which a single central trunk L′ is used in place of the two trunks L, and the positions of the two pulleys N′ P are changed to the positions shown at *n′ p*, the course of the cord being indicated by dotted lines.

I do not in this application claim broadly operating the sliding door of a car by means of an endless cord.

I claim as my invention—

1. In a street-railway car, the combination of the sliding door F, bracket *f*, roller-frame G, rollers H, and rail *i* beneath the floor, all substantially as and for the purposes set forth.

2. The combination of the door F with the track *i* beneath the floor; the cord M, pulleys N N′, drum O, and pulleys P P′, all arranged substantially as described.

In testimony of which invention I have hereunto set my hand.

SAM'L H. LITTLE.

Witnesses:

SAM'L KNIGHT.
CHARLES PICKLES.

287 United States Circuit Court, Southern District of New York.
In Equity.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY CO.

SIRS: Notice is hereby given that upon the defendant's pleadings and proofs herein and the affidavits and papers annexed hereto, copies of which are herewith served upon you, I shall apply to this honorable court, at the court-rooms, in the United States post-office and court building, in the city of New York, on Friday, the 13th day of February, 1885, at the opening of the court on that day, or as soon thereafter as counsel can be heard, for leave to amend the answer of the defendant in this case *nunc pro tunc* by filing the amendment to its answer, a copy of which proposed amendment I annex hereto.

I shall also apply to this court for an order allowing the proofs already taken in behalf of the defendant as to the state of the art prior to the application for the letters patent mentioned 288 in the complainant's bill of complaint to stand and to have the same force and effect as if the matters and things concerning which proofs have been taken on behalf of the defendant had been specially set forth and pleaded in the defendant's answer as originally filed.

I shall also then and there apply for such other and further order concerning the premises as may be meet.

Respectfully,

DAVIES AND RAPALLO,
Defendant's Solicitors.

New York, February 9, 1885.
To Messrs. Munson and Philipp, complainant's —.

289 STATE OF NEW YORK,
City and County of New York, } *ss:*

United States Circuit Court, Southern District of New York.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY CO.

Edwin H. Brown, being duly sworn, deposes and says:

I am counsel for the defendant in the above-entitled cause.

My connection with this cause dates from October 2, 1884, on which date I was retained as counsel by the defendant herein. The pleadings in the case had been filed and the taking of *prima facie* testimony on behalf of the complainant had been finished previous to that time.

The defendant herein commenced the taking of proofs on its behalf on November 5, 1884, and continued the taking of proofs from time to time until January 17, 1885.

During the taking of the defendant's testimony I introduced several patents prior in date to the letters patent upon which 290 this suit is brought for the purpose of showing the state of the art previous to the application for the letters patent mentioned in the bill of complaint. I also called several witnesses to testify as to the prior state of the art. The witnesses who were examined to show the prior state of the art were not named in the answer, nor were the patents which were introduced in evidence for the purpose of showing the prior state of the art specifically set forth in the answer.

In introducing the above-mentioned patents in evidence and in taking the testimony of the witnesses before referred to I proceeded upon the theory that the statutes only require the defendant to set forth specifically such patents as anticipate the claims of a patent upon which suit is brought by setting forth structures which come directly within the terms of the claims of a patent in suit and, the names of persons who have known or used structures similar to that described and claimed in the letters patent upon which suit is brought, and that it was not necessary to plead specifically prior patents and structures which formed part of the state of the 291 art and which were to be introduced to show that the patentee, through whom the complainant claims, was not the original and first inventor or discoverer of any material and substantial part of the thing patented.

The defendant in this case does not contend that the prior patents and the constructions which were in public use previous to the application for the letters patent mentioned in the bill of complaint, concerning which testimony was introduced by it, anticipate the subject-matter of the complainant's by severally showing subject-matter claimed in the letters patent upon which this suit is based, but simply that, in view of these patents and the prior uses testified to by its witnesses, there was no patentable invention in the subject-matter of the letters patent of the complainant. It therefore appeared to me unnecessary to set forth these patents and the names of these witnesses specifically in the answer. It was my opinion that the defendant had a right to show the prior state of the art without specifically pleading any of the patents or prior uses which it might introduce to show the prior state of the art, and that 292 the court would then be free to decide whether, in view of the state of the art thus set forth in the proofs, there was any patentable invention in the subject-matter of the patent upon which this suit is brought.

As, however, the complainant has insisted upon objecting to everything not specifically set forth in the answer I have deemed it best to make an application for an amendment to the answer. I am of the opinion that the patents introduced in evidence and the testimony taken establish a good defense.

Moreover, I did not know of the patents of which I introduced copies in evidence to show the prior state of the art until within a few days before commencing to take proofs, and the existence of locomotives having cabs provided with doors and operating mechanism similar to those which are described in the depositions of Henry A. Webster and Thomas Lonergan taken in this cause was unknown to me until the very day Mr. Webster came to my office to give this testimony. I have been looking for further references to the

293 complainant's patent up to the present time, and, to avoid troubling the court with repealled motions, I have deferred making application for leave to amend the answer until my investigations should be completed.

EDWIN H. BROWN.

Sworn to and subscribed before me this 7th day of February, 1885.

T. J. KEANE,
Notary Public (12), *N. Y. Co.*

294 STATE OF NEW YORK,
City and County of New York, } *ss:*

United States Circuit Court, Southern District of New York. In Equity.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY CO.

Julien T. Davies, being duly sworn, deposes and says:

I am a member of the firm of Davies and Rapallo, solicitors for the defendant in this cause.

My firm was substituted as solicitors for the defendant on January 2, 1885. Previous to that time my firm had no connection with the case and I knew nothing about it, nor did any of my partners or assistants in my office have any connection with the case or know anything about it.

JULIEN T. DAVIES.

Sworn to before me this 7th day of February, 1885.

HOWARD TOWNSEND,
Notary Public, New York Co., N. Y.

295 United States Circuit Court, Southern District of New York. In Equity.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY CO.

Amendment to the answer of the above defendant to the bill of complaint of the above-named complainant.

The defendant hereby amends its said answer in the above-entitled cause as follows, to wit:

By adding the following to the end of the first paragraph of the seventh clause of the defendant's answer:

"And also that, in view of the structures shown and described in the following letters patent, William W. Rosenfield was not the original and first inventor or discoverer of any material and substantial part of the thing patented.

296 "And this defendant, further answering, says that in the said prior state of the art were structures which are set forth in—

" United States letters patent No. 32512, granted June 11, 1861, to Darwin De Forrest Douglass, for improvement in window blind.

" United States letters patent No. 32681, granted July 2, 1861, to Thomas Castor, for improvement for opening railroad-car doors.

" United States letters patent No. 41676, granted February 23d, 1864, to William H. Brown, for improvement in opening and closing iron blinds or shutters.

" United States letters patent No. 91026, granted June 9, 1869, to Daniel Kidder, for improvement in shutter-worker.

" United States letter- patent No. 93322, granted August 3, 1869, to John F. Madison and Henry McLaughlin, for improvement in street cars.

" United States letters patent No. 136,801, granted March 11, 1873, to John F. Wollensak, for improvement in transom lifters and locks.

" United States letters patent No. 138,879, granted May 13, 1873, to Augustus H. Gibbs, for improvement in shutter-workers.

297 " United States letters patent No. 140,052, granted June 17, 1873, to Samuel H. Little, for improvement in street-railway cars.

" United States letters patent No. 147,190, granted February 3, 1874, to John Stephenson, for improvement in devices for operating street-car doors.

" United States letters patent No. 155,118, granted Sept. 15, 1874, to John Stephenson, for improvement in devices for operating street-car doors.

" United States letters patent No. 157,368, granted December 1, 1874, to George M. Brill, for improvement in operating street-car doors.

" United States letters patent No. 162,964, granted May 4, 1875, to John Stephenson, for improvement in street cars.

' United States letters patent No. 163,770, granted May 25, 1875, to Daniel R. Hart, for improvement in devices for operating street-car doors.

" United States letters patent No. 202,413, granted April 16, 1878, to Thomas Corrigan, for improvement in shutter-workers.

298 " United States letter- patent No. 185,344, granted December 12, 1876, to John A. Moore and Thomas M. Thompson, for improvement in gates for railway passenger cars.

" United States letter- patent No. 212,012, granted February 4, 1879, to John Kelso and William H. Ludewigs, for improvement in shutter-workers.

" United States letter patent No. 219,852, granted September 23, 1879, to Oliver Ferguson, for improvement in gates.

" United States letter patent No. 235,311, granted December 7, 1880, to John Stephenson, for improvement in tram car.

" British letters patent No. 1602, granted May 27, 1872, to Samuel Smith, for improvements in the mode of opening and shutting doors of vehicles, &c.

" British letters patent No. 653, granted February 21, 1873, to

Thomas Poolly Cooper, for an improved mode and means for closing and fastening railway-carriage doors.

"British letters patent No. 1072, granted March 16, 1877, to Alexander Melville Clark, for improvement in tramway cars.

"And this defendant, further answering, says, on information and belief, that in the said prior state of the art were the Miller and Janney car-coupling systems, which were in common and public
299 use in the United States and known to Henry L. Brevoort, of Brooklyn, in the State of New York, and to persons connected with the railroads generally.

"And this defendant, further answering, says, on information and belief, that in the said prior state of the art, and on the New York, New Haven and Stonington railroad, the Connecticut railroad, the New Jersey Southern railroad, the New Jersey Central railroad, the New York, Boston and Montreal railroad, and the New York Elevated railroad, were locomotives having cabs provided with doors, which doors had combined with them mechanism operating in substantially the same way as the gates in the complainant's letters patent and their operating mechanism, and that such locomotives so provided with doors having such operating mechanism were known to employees of the railroads aforesaid and, among others, to Henry A. Webster and Thomas Lonegran, both residing at the city of New York, in the State of New York.

"And this defendant, further answering, says that gates similar to those now used by it were in public use on its cars before
300 any invention by William W. Rosenfield of the alleged improvement described and claimed in the letters patent mentioned in the bill of complaint, and that such use was known to Henry A. Webster, William R. Shannon, and Frank M. Caille, all residing at the city of New York, in the State of New York, and generally to the emyloyees of this defendant and the public generally."

DAVIES AND RAPALLO,
Solicitors for Defendant.

301 [Endorsed :] United States circuit court, south. dist. of New York. In equity. Josep- Aron *vs.* The Manhattan Railway Co. Motion papers to amend answer. Filed in open court March 27, 1885. Service of a true copy of the within papers is hereby admitted this 9th day of February, 1885. Munson and Philipps, comp't's sol's.

302 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Friday, the twenty-seventh day of March, in the year of our Lord one thousand and eight hundred and eighty-five.

Present: The Honorable William J. Wallace, circuit judge.

JOSEPH ARON
vs.
THE MANHATTAN RAILWAY CO. } In Equity.

A motion for leave to amend the answer herein in the particulars set forth in the proposed amendment, a copy of which is hereto annexed, having come on to be heard this day upon the pleadings and proofs herein and the affidavits of Mr. Edwin H. Brown and Julien T. Davis, after hearing Mr. Edwin H. Brown, counsel for defendant, in support of said motion, and Mr. M. B. Phillip, 303 counsel for complainant, in opposition thereto, it is ordered, adjudged, and decreed that the said motion be, and the same is hereby, denied.

WM. J. WALLACE.

304 United States Circuit Court, Southern District of New York.
In Equity.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY COMPANY.

Amendments to the answer of the above defendants to the bill of complaint of the above-named complainant.

The defendant hereby amends its said answer in the above-entitled cause as follows, to wit, by adding the following to the end of the first paragraph of the seventh clause of the defendant's answer:

"And also that, in view of the structure shown and described in the following letters patent, William W. Rosenfield was not the original and first inventor or discoverer of any material and substantial part of the thing patented."

"And this defendant, further answering, says that in the said prior state of the art were structures which are set forth in—

305 "United States letters patent No. 32512, granted June 11, 1861, to Darwin De Forrest Douglass, for improvement in window blind.

"United States letters patent No. 32681, granted July 2, 1861, to Thomas Castor, for improvement for opening railroad-car doors.

"United States letters patent No. 41676, granted February 23, 1864, to William H. Brown, for improvement in opening and closing iron blinds or shutters.

"United States letters patent No. 91026, granted June 9, 1869, to Daniel Kidder, for improvement in shutter-worker.

"United States letters patent No. 93322, granted August 3, 1869, to John F. Madison and Henry McLaughlin, for improvement in street cars.

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"United States letters patent No. 138,879, granted May 13, 1873, to Augustus H. Gibbs, for improvement in shutter-workers.

306 "United States letters patent No. 140,052, granted June 17, 1873, to Samuel H. Little, for improvement in street-railways cars.

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"United States letters patent No. 155,118, granted September 15, 1874, to John Stephenson, for improvement in devices for operating street-car doors.

"United States letters patent No. 157,368, granted December 1, 1874, to George M. Brill, for improvement in operating street-car doors.

"United States letters patent No. 162,964, granted May 4, 1875, to John Stephenson, for improvement in street cars.

"United States letters patent No. 163,770, granted May 25, 1875, to Daniel R. Hart, for improvement in devices for operating street-car doors.

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"British letters patent No. 1072, granted March 16th, 1877, to Alexander Melville Clark, for improvement in tramway cars.

"And this defendant, further answering, says, on information and belief, that in the said prior state of the art were the Miller and Janney car-coupling systems, which were in common and public use in the United States and known to Henry L. Breevoort, 308 of Brooklyn, in the State of New York, and to persons connected with railroads generally.

"And this defendant, further answering, says, on information and belief, that in the said prior state of the art and on the New York, New Haven and Stonington railroad, the Connecticut railroad, the New Jersey Southern railroad, the New Jersey Central railroad, the New York, Boston and Montreal railroad, and the New York Elevated railroad were locomotives having cabs provided with doors which *doors* had combined with them mechanism operating in substantially the same way as the gates in the complainant's letters patent and their operating mechanism, and such locomotives so provided with doors having such operating mechanism were known to employees of the railroads aforesaid, and among others to Henry A. Webster and Thomas Lonergan, both residing at the city of New York, in the State of New York.

"And this defendant, further answering, says that gates similar to those now used by it were in public use on its cars before any inven-

tion by William W. Rosenfield of the alleged improvement
309 described and claimed in the letters patent mentioned in the
bill of complaint, and that such use was known to Henry A. Webster, William R. Shannon, and Frank M. Caille, all residing at the city of New York, in the State of New York, and generally to the employees of this defendant and the public generally."

[Endorsed:] U. S. circuit court, southern district of New York. In equity. Joseph Aron *vs.* Manhattan Railway Co. Order denying motion to amend answer, etc. U. S. circuit court. Filed Mar. 30, 1885. Timothy Griffith, clerk. G. Stanton. G. M.

310 At a stated term of the circuit court of the United States
of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Tuesday, the fifteenth day of December, in the year of our Lord one thousand eight hundred and eighty-five.

Present: The Honorable William J. Wallace, circuit judge.

Joseph Aron
vs.
Manhattan Railway Company. } (Eq. Cal. Oct. T., '85.)

This cause coming on for final hearing on pleadings and proofs—
Mr. M. B. Philipp is heard in behalf of complainant.
Mr. Edwin H. Brown is heard in behalf of defendant.

C. A. V.

311 U. S. Circuit Court, Southern District of New York.

ARON *vs.* THE MANHATTAN RAILWAY COMPANY.

WALLACE, *J.*:

This suit is brought to restrain infringement of letters patent No. 288,494, granted November 13, 1883, to Wm. W. Rosenfield, assignor. The patent relates to gates of cars in which the passengers get on and off at the sides of the platform, the gates being arranged to close the side entrances to the car platform except when the passengers are getting off and on. Such cars are in use upon the elevated railways in the city of *of* New York.

The patent describes two improvements in these gates, only one of which is involved in this controversy. This consists in operating mechanism by which the guard or attendant upon the platform of
the car, while standing out of the way of incoming or out-
312 going passengers and in the passage-way between two cars, can
simultaneously open and close the gates of both cars. The only question litigated is whether there was any patentable novelty in this improvement. In the general preliminary statement of the object of the invention *of* the patentee states in his specification that "in many classes of railway cars, and *in* particularly in those used upon the elevated and other city railways, it has been found neces-

sary, in order to prevent passengers from falling from the train, and also to prevent persons from attempting to get off or on the cars while in motion, to provide the entrances on the car platform with gates by which they can be closed except at the proper time. As there is usually but one guard or attendant stationed between two adjoining cars it follows that to open or close both gates he must pass around from one to the other of the adjoining platform-. It is the object of the present invention, among other things, to provide means by which the guard or attendant can, without changing his position, open or close both gates simultaneously and with the least possible delay. To that end one feature of the invention consists in providing the gates with connections so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passage-way leading from one of the cars to the other."

313 In the detailed description illustrated by the drawing the platforms are arranged so that the entrances to them from the station are at the side, and are provided with the usual guard rails, which extend across the ends, except a space at the middle, which is left open to afford a passage-way from one car to the other. The side entrances to the platforms are closed by gates which are hinged to posts at the outer ends of the guard rails, and are arranged to swing inward against the rails in opening. The devices for operating the gates are a link connecting a sliding rod with the gate and a rod which slides in or on bearings secured to the guard rail with a handle which is located near the passage-way. When the platforms of two cars adjoin each other the handles can be simultaneously grasped by the guard standing in the passage-way, one with each hand. Two arrangements of these co-operating connections are suggested in the description and are shown in the drawing. In one the sliding rods extend along the outside of the guard rails and are connected by the links to the levers or arms which extend outward from the gates, the opening of the gates being effected by pushing the sliding rod. In the other the sliding rods extend along the inside of the guard rails and are connected by the links directly to the gates, the opening being effected by pulling upon the sliding rod.

314 The patentee states that the sliding rods will preferably be provided with some form of locking mechanism by which the gates can be fastened in the open or closed condition.

The claims of the patent are six in number, five of which only are in controversy, and they are as follows:

"1. The combination, with a gate arranged to close the side entrance to a car platform, of an operating handle located at or near the inner end of the platform, guard rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard rail, substantially as described.

"2. The combination, with gates arranged to close the side entrance to the adjoining platforms of two cars, of operating handles located at or near the inner ends of the platform, guard rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard rails, substantially as described.

"3. The combination, with a railway car and its platform having an end guard rail by which a side entrance thereto is provided, of a
gate for closing said entrance, a rod, as *f*, sliding in or on
315 guides secured to said guard rail, & a link, as *e*, connected to
said gate and rod, all substantially as described.

"4. The combination, with a railway car and its platform having an end guard rail by which a side entrance thereto is provided, of a swinging gate for closing said entrance, a rod, as *f*, sliding in or on a guide secured to said rail, a link, as *e*, connected to said gate & rod, and means for locking said gate in its closed position, all substantially as described.

"5. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of rods, as *f*, sliding in or on guides secured to the guard rails of said platforms, and links, as *e*, connected to said gates and rods, substantially as described."

A brief reference to the prior state of the art will indicate that the combinations referred to in the several claims are merely an application to a new situation of old devices which had been previously *been* applied to analogous uses.

Devices to open and close an aperture at a distance from the operator in a great variety of forms was old. As illustrations of those things which are matters of common knowledge and of — the court will take judicial notice, it is sufficient to allude to the strap used by the driver at the front of an omnibus to open and close the
rear door; to the devices for opening or closing valves at a
316 distance in steam and hydraulic apparatus, and to the devices
used at railway switches for opening and closing the rails.

Referring to the prior state of the art, as shown by various prior patents which have been introduced in evidence, it appears also that mechanism to open and close the entrance to passenger cars at a point distance from the operator was likewise old, as where the operator standing upon the front platform employed such mechanism to open or close a door at the rear platform. One prior patent alone, the one granted to John Stephenson September 15, 1874, shows five methods of closing and opening the rear doors of street cars from the front platform.

Mechanism for closing and opening apertures at a distance from the operator, in which the same devices were employed as are employed by the patentee, was old and is disclosed in a number of earlier patents, which have been put in evidence. It will suffice to refer to two only. The patent to Woolensak of March 11, 1873, for an improvement in transom-lifters, describes the means for opening and closing the transom as consisting of a sliding rod, which is connected by a pivoted link to the arm of the transom frame. The
patent to Carrigan, granted April 16, 1878, for an improve-
317 ment in blind-adjusters, whereby outside blinds are opened
and closed without lifting the window-sash, describes as the
mechanism employed a sliding bar connected by a pivot link with

a hinged shutter. In both these patents the aper*a*ture to be opened and closed at a distance from the operator—in the one case a shutter and in another a transom—is opened and closed, as is the case in the patent in suit, by pushing or pulling the sliding rod or bar. In both of these patents there is likewise described a locking device by means of which the sliding rod or bar is retained in a fixed position so that the shutter or the transom will remain fastened when opened or closed, at the option of the operator, thus showing opening, closing, and locking apparatus in all essentials like that of the patent in suit. Moreover, the patent to Carrigan shows this apparatus arranged to open and close the two shutters of the windows, at the option of the operator, simultaneously, the sliding bars being so arranged as to be pushed or pulled each by one hand of the operator.

Mechanism for opening and closing apertures distant from the operator, in which the devices used for the purpose are the mechanical equivalents of those employed by the pat*a*ntee, is shown to be old by a large number of patents which have been put in evidence.

This partial exhibit of the prior state of the art demonstrates
318 that what the patentee did was to adapt well-known devices to the special purpose to which he contemplated their application. It was necessary that the gate should swing inward to open and outward to close; that the sliding rod should be located where it would be out of the way of passengers entering or leaving the platform, and that the end or handle of the rod should be located where it could be conveniently operated by the attendant without inconveniencing outgoing or incoming passengers. The new situation required adequate modifications of existing devices for opening and closing an aper*a*ture at a distance from the operator appropriate to the new occasion. Accordingly the patentee located the rods on bearings secured to the guard rails with their handles near the passage-way formed by the space or opening near the middle of the guard rail. If this required invention his improvement was the proper subject of a patent. He did nothing more and nothing less than this. It seems impossible to doubt that any competent mechanic familiar with devices well known in the state of the art could have done this readily and successfully upon the mere suggestion of the purpose which it was desirable to effect. When it was done as to one car platform it was only requisite to duplicate it upon another to make the improvement of the patentee in all its length and breadth.

319 The pat*a*ntee is entitled to the merit of being the first to conceive of the convenience and utility of a gate opening and closing mechanism which could be operated efficiently by an attendant in the new situation. His right to a patent, however, must rest upon the novelty of the means he contrives to carry his idea into practical application. It rarely happens that old instrumentalities are so perfectly adapted for a use for which they were not originally intended as not to require any alteration or modification. If these changes involve only the exercise of ordinary mechanical skill they do not sanction the patent, and in most of the adjudged cases where it has been held that *that* the application of old devices to a

new use was not patentable there were changes of form, proportion, or organization of this character which were necessary to accommodate them to the new occasion. The present case falls within this category. The bill is therefore dismissed.

320 [Endorsed:] United States circuit court, southern district of N. Y. Akron *vs.* The Manhattan Railway Company. Opinion. Wallace, J. U. S. circuit court. Filed Jan. 27, 1886. Timothy Griffith, clerk.

321 At a stated term of the circuit court of the United States of America, second circuit and southern district of New York, held at the United States court-rooms, in the city of New York, on the 12th day of March, in the year of Lord one thousand eight hundred and eighty-six.

Present: Hon. William J. Wallace, circuit judge.

JOSEPH ARON
vs.
MANHATTAN RAILWAY COMPANY. } In Equity.

This cause having come on for hearing upon the pleadings, proofs, and proceedings herein, now, after hearing Messrs. Munson & Phillips, counsel for complain't, and Edwin H. Brown, counsel for defendant, and due deliberation had, it is hereby ordered, adjudged, and decreed that the letters patent upon which this suit was brought are invalid so far as the first five claims are concerned.

322 It is further ordered, adjudged, and decreed that the bill of complaint herein be, and the same hereby is, dismissed.

And it is further ordered, adjudged, and decreed that the defendant do recover of the complainant its costs and -isbursements in this case, amounting to the sum of three hundred and forty-six and $\frac{77}{100}$ dollars ($346.77), and that the said complainant pay said sum to the defendant, and that the defendant have execution and the proper process of this court for the collection thereof.

W. J. WALLACE,
Circuit Judge.

Approved as to form.

MUNSON & PHILLIP,
Sol's and of Counsel for Compl-i-ant.
DAVIES AND RAPALLO,
Defendant's Sol's.

323 [Endorsed:] U. S. circuit court, southern dist. of N. Y. In equity. Aron *versus* Manhattan R'y Co. Final decree. U. S. circuit court. Filed March 12, 1886. Timothy Griffith, clerk.

324 United States Circuit Court, Southern District of New York.
In Equity.

JOSEPH ARON *vs.* THE MANHATTAN RAILWAY COMPANY.

We hereby consent that the foregoing papers shall constitute the record to be sent by the clerk of the United States circuit court for the southern district of New York to the Supreme Court of the United States on the appeal to the said Supreme Court in the above-entiled cause, and that the balance of the exhibits in the case may be retained by the clerk of said circuit court until the hearing of the appeal.

Dated New York, July 21, 1886.

EDWIN H. BROWN,
Counsel for Defendant.
DAVIES & RAPALLO,
Solicitors for Def't.

325 (Endorsed:) U.S. circuit court. Filed July 26, 1886. Timothy Griffith, clerk.

326 Circuit Court of the United States, Southern District of New York. In Equity.

JOSEPH ARON
vs.
THE MANHATTAN RAILWAY COMPANY. } Docket No. 3006.

To the honorable the Supreme Court of the United States:

The appeal of Joseph Aron, the above-named complainant and appellant, respectfully showeth that on the 11th day of March, 1884, the above-named Joseph Aron filed his bill of complaint in the circuit court of the United States for the southern district of New York against The Manhattan Railway Company, the above-named defendant and appellee, to enjoin and restrain the said de- 327 fendant and appellee from infringing letters patent of the United States No. 288,494, and dated November 13th, 1883, and granted to the complainant and appellant, as assignee of William W. Rosenfield, for an improvement in railway-car gate, and owned by the complainant and appellant, and also praying for an account of profits and assessment of damages arising from said infringement; that a subpœna, issued out of said circuit court, was duly served on the said defendant and appellee; that the defendant and appellee filed his answer to the said bill of complaint, to which the complainant and appellant filed a general replication.

Whereupon such proceedings were had in the cause that on the twelfth day of March, 1886, a final decree was made and 328 entered by said circuit court in said cause, wherein it was adjudged and decreed that the said bill of complaint be dismissed with costs to the defendant and appellee; which said judgment and decree is, as the complainant and appellant is advised, erroneous and ought to be reversed.

Wherefore this appellant appeals from the whole of said decree of said circuit court to the Supreme Court of the United States, and respectfully prays that the said decree of the said circuit court and the bill, answer, replication, pleadings, depositions, evidence, exhibits, and proceedings in the said cause may be sent to the Supreme Court of the United States without delay, and that the said Supreme Court will proceed to hear the cause anew, and that 329 the said decree of the said circuit court and every part thereof may be reversed or such other decree made as to the said Supreme Court shall seem just.

JOSEPH ARON,
By his solicitors, MUNSON & PHILIPP.

MUNSON & PHILIPP,
Comp't's & Appellant's Sol's & of Counsel.

(Endorsed:) U. S. circuit court, southern dist. of N. Y. In equity. Joseph Aron *versus* The Manhattan Railway Company. Appeal. The within appeal is hereby allowed. Dated March 18, 1886. Addison Brown.

330 Due service of a copy of the within appeal is admitted this 18th day of March, 1886, but without waiving any objections to the sureties on the appeal bond.

DAVIES & RAPALLO,
Def't's Sol'rs.

331 Supreme Court of the United States.

JOSEPH ARON
vs.
THE MANHATTAN RAILWAY COMPANY.

Know all men by these presents that we, Louis Monrose, of 1065 Madison Ave., New York city, N. Y., and C. Edward Oswald, of 102 East 84th street, New York city, N. Y., are held and firmly bound unto The Manhattan Railway Company, of the city, county, and State of New York, in the sum of five hundred dollars, to be paid unto The Manhattan Railway Company, its successors or assigns; to which payment, well and truly to be made, we bind ourselves and each of us, jointly and severally, and our and each of our heirs, executors, and administrators, firmly by these presents. 332

Sealed with our seals. Dated this 16th day of March, 1886.

Whereas the above-named Joseph Aron hath taken an appeal to the Supreme Court of the United States to reverse the decree rendered in the above-entitled suit by the circuit court of the United States for the southern district of New York:

Now, therefore, the condition of this obligation is such that if the above-named Joseph Aron shall prosecute his said appeal to effect and answer all costs and damages if he shall fail to make good his plea, then this obligation shall be void; otherwise to remain in full force and virtue.

L. MONROSE. [L. S.]
C. EDWARD OSWALD. [L. S.]

Sealed and delivered in the presence of—
T. H. PALMER.

333 STATE OF NEW YORK,
City and County of New York, } *ss:*

Louis Monrose, being duly sworn, deposes and says that he is a freeholder residing in the city, county, and State of New York, and that he is worth the sum of one thousand dollars over and above his just liabilities.

L. MONROSE.

Subscribed and sworn to before me this 16th d-y of March, 1886.
[L. S.] THOMSON H. PALMER,
Notary Public, Kings County, N. Y.

Certificate filed in N. Y. Co.

STATE OF NEW YORK,
City and County of New York, } *ss:*

334 C. Edward Oswald, being duly sworn, deposes and says that he is a freeholder residing in the city, county, and State of New York, and that he is worth the sum of one thousand dollars *dollars* over and above his just liabilities.

C. EDWARD OSWALD.

Subscribed and sworn to before me this 16th day of March, 1886.
[L. S.] THOMSON H. PALMER,
Notary Public, Kings County, N. Y.

Certificate filed in N. Y. Co.

(Endorsed:) United States Supreme Court. Joseph Aron *vs.* The Manhattan Railway Company. Bond on appeal. The within bond is approved. Dated March 18, 1886. Addison Brown. U. S. circuit court. Filed Mar. 18, 1886. Timothy Griffith, clerk.

335 By the Honorable Addison Brown, one of the judges of the circuit court of the United States for the southern district of New York.

To The Manhattan Railway Company:

Whereas Joseph Aron has appealed to the Supreme Court of the United States from a decree lately rendered in the circuit court of the United States for the southern district of New York, made in favor of you, the said The Manhattan Railway Company, and has filed the security as required by law, you are, therefore, cited to appear before the said Supreme Court, at the city of Washington, on the second Monday of October next, to do and receive what shall appertain to justice to be done in the premises.

336 Given under my hand, at the city of New York, in the southern district of New York, in the second circuit, on the 18th day of March, 1886.

ADDISON BROWN.

(Endorsed:) United States Supreme Court. Joseph Aron *vs.* The Manhattan Railway Company. Citation on appeal. Munson & Philipp, compl't's & appellant's sol'rs & of counsel. Due service of a copy of the within citation on appeal is admitted this 18th day of Mar., 1886, but without waiving any obligations to the securities on the appeal bond. Davies & Rapallo, def't's sol'rs. U. S. circuit court. Filed Mar. 19th, 1886. Timothy Griffith, clerk.

337 UNITED STATES OF AMERICA, } *ss:*
Southern District of New York, }

I, Timothy Griffith, clerk of the circuit court of the United States of America for the southern district of New York, in the second circuit, do hereby certify that the foregoing pages, numbered from one to three hundred and thirty-six, inclusive, contain a true and complete transcript of the record and proceedings had in said court in the case of Joseph Aron, complainant & appellant, against The Manhattan Railway Company, defendant & appellee, as the same remain of record and on file in said office.

In testimony whereof I have caused the seal of the said court to be hereunto affixed at the city of New York, in the southern district of New York, in the second circuit, this 27th day of July, in the year of our Lord one thousand eight hundred and eighty-six, and of the Independence of the said United States the one hundred and eleventh.

[Seal of U. S. Circuit Court, South. Dist. New York.]

TIMOTHY GRIFFITH, *Clerk.*

Endorsed on cover: S. New York C. C. U. S. No. 304. Joseph Aron, appellant, *vs.* The Manhattan Railway Company. Filed July 28th, 1886.

Office Supreme Court U. S.
FILED.
SEP 28 1889
JAMES. H. McKENNEY,
CLERK.

WITHDRAWN

SUPREME COURT OF THE UNITED STATES.

No. 304.

◆◆◆

JOSEPH ARON,
Appellant,

vs.

THE MANHATTAN RAILWAY COMPANY,
Appellee.

◆◆◆

BRIEF FOR APPELLANT.

C. G. Burgoyne's Printing Business, 146-150 Centre St., N. Y.

Supreme Court of the United States.

IN EQUITY—No. 304.

Joseph Aron,
Appellant,

vs.

The Manhattan Railway Co.,
Appellee.

BRIEF ON BEHALF OF APPELLANT.

I.

Abstract of Case.

This suit was brought in the Circuit Court of the United States for the Southern District of New York, March 11, 1884, for infringement of Letters Patent of the United States granted to the said Joseph Aron as the assignee of William W. Rosenfield, dated November 13, 1883, No. 288,494, for Improvement in Railway Car Gates, a copy of which is found at page 57.

The bill of complaint was in the usual form, with the ordinary prayers for an accounting of profits and damages, a decree therefor and a perpetual injunction (pp. 1–4).

The answer of the defendant alleged that Rosenfield was not the first or original inventor of what was set forth and claimed in said letters patent, but that the same was substantially described in certain English and American patents, of which, however, only the English patents known as Defendant's Exhibits Clark, Cooper and Smith patents, and the American patents known as Defendant's Exhibits Stephenson Patents, Nos. 1, 2, and 3, were introduced in evidence on behalf of the defendant.

It further alleged that what was described in the patent in suit did not, in view of the state of the art, constitute invention.

It further denied that it infringed said letters patent (pp. 5, 6).

The complainant proceeded to make out his *prima facie* case by taking the testimony Behrens, a properly qualified expert witness, having held the position of Examiner in the Patent Office for some six years, for about three years of which he had charge of the division which embraced inventions relating to gates. He testified that the defendant company employed cars having gates the same as the model Complainant's Exhibit Complainant's Gates, and that they contained the inventions embraced in the first five claims of the letters patent in suit.

On behalf of the defendant in reply there were offered in evidence twenty-one English and American patents, only six of which, heretofore referred to, were set up in the answer. There was also taken the deposition of Webster, general foreman in the car shops of the Manhattan Railway Company, appellee, who testified that the said company had drawings made of the gate devices used by it complained of in this suit, June 3, 1882, and that the devices shown by these drawings were first put into use on the cars of the company on November 4, 1882, and that Peeples, master mechanic of said company, was the originator of that mechanism. He also testified regarding the old gates used before this time on the cars of this road and that experiments had been made which had not, however, turned out satisfactorily, before the mechanism was applied in November, 1882. He also testified respecting certain devices used on the cabs of locomotives like the Defendant's Exhibit Locomotive Cab Model No. 2, on various railroads in this country prior to the date of the patent in suit.

There was also taken the deposition of Lonergan, who testified regarding devices in use on locomotive cabs like the said locomotive cab model No. 2 prior to the date of the patent in suit.

There was also taken the deposition of Walter R. Shannon, who testified regarding the use by the defendant of the cars complained of, beginning the first part of November, 1882.

There was also taken the deposition of Frank M. Caille, who testified he was a mechanical draftsman in the employ of the Manhattan Railway Company, and made the drawings for the devices used by that company complained of, the 3d of June, 1882, according to orders given to him by Peeples.

There was also taken the deposition of Brevoort, an expert, who testified about old prior uses of devices on locomotive cabs, and concerning the use of the old Miller and Jenny car-coupling devices, and also that in his opinion, in view of these old uses and the twenty-one patents introduced in evidence on behalf of the defendants, heretofore referred to, that there was nothing patentable in the invention embraced in the said five claims of the patent in suit.

Appellant, in rebuttal of this testimony, took the depositions of William W. Rosenfield, the inventor, Anthony Rosenfield, Hovey, Aron, and Kiernan, to show that the said Rosenfield not only made the invention claimed in the said five claims of the patent in suit prior to the time that the Manhattan Railway Company, appellee, made any drawings of or introduced onto its cars the devices claimed to be infringements of the patent in suit, but had also shown a model of the same to F. K. Hain, general manager of the said company.

He also took the depositions of Krom and Fagan, who had been employed as guards upon the cars of the Manhattan Railway Company and had used the devices complained of, and also those that had preceded them, and who testified regarding the objections, disadvantages and dangers attending the use of the old devices and the great advantages in safety, in reduction of labor and otherwise, due to the employment of the devices complained of which infringed the five claims of the patent in suit.

He also took the deposition of Renwick, a well-known mechanical engineer and expert, who had been a principal examiner in the Patent Office as early as 1847 and 1848, who testified that not one of the old structures relied upon by the appellee contained the invention of the five claims of the patent in suit, and that the apparatus described and claimed in the patent in suit required invention to produce the same.

In surrebuttal the appellee took the deposition of the said F. K. Hain regarding the use of devices on locomotive cabs like the Locomotive Cab Model No. 2, he admitting that the invention of the Rosenfield patent had been brought to his attention.

The depositions of Webster, Lonergan, Shannon and Caille, so far as they related to prior use of devices upon the cars of the appellee and locomotive cabs, and the deposition of Brevoort, so far as it related to such devices on locomotive cabs and the Miller and Jenney car-coupling devices, were objected to because neither the names nor residences of these witnesses, nor the places where the persons by whom the devices testified to by them had been used, were set up in the answer, as required by Section 4920 of the Revised Statutes, while the deposition of Hain was objected to because it was not, especially regarding.

the prior use of devices on locomotive cabs, in surrebuttal of that taken on behalf of the appellant.

Fifteen of the letters patent that were offered in evidence were also objected to on the ground that they were not set up in the answer, as required by said Section 4920.

After these objections were made the appellee The Manhattan Railway Company, moved for leave to amend its answer, setting up the prior uses testified to by the witnesses and also the fifteen letters patent, which was denied (pp. 174–179).

After final hearing his Honor WILLIAM J. WALLACE filed his opinion on the 27th of January, 1886 (printed at page 181 of the record), holding that there was no patentable novelty in the subject matter of the patent in suit, and dismissing the bill of complaint. A final decree for the defendant was entered March 12, 1886 (printed at page 185 of the record).

From this final decree the complainant in the Court below appeals to this Court.

II.

The point upon which the complainant below, appellant in this Court, relies is as follows:

That the Court erred in holding that there was no patentable novelty in the subject matter of the first five claims of the patent in suit.

A number of other defenses besides the non-patentability of the subject matter were presented in the brief and oral argument in the Court below on behalf of the appellee. The Court below did not evidently, however, regard them as good because it did not refer to any of them in its opinion. As, however, the whole record is here and these defenses may be again urged, and as the evidence introduced to support them bears somewhat upon the question of patentability of the subject matter, we will present our answer to them as briefly as possible.

III.

The Patented Improvements.

The patent in suit is for improvements applicable to railway cars in which the passengers get on and off at the sides of end platforms, the entrances thereto being controlled by gates which are closed except while the car is at rest when the passengers are getting on or off, a single guard or attendant being in charge of two of the gates of the adjoining ends of two cars, and also having other duties to perform including the signaling of the engineer by pulling the bell-rope.

The patent describes two improvements, one consisting in combinations and arrangements of mechanism by which the guard, while standing out of the way of the outgoing or incoming passengers, can, without shifting his position, simultaneously open or close and lock closed the gates of two adjoining cars. This improvement is embraced in the first five claims of the patent in suit.

The other improvement consists in a supplemental gate which closes the space between two platforms of two adjoining cars to prevent persons from being crowded from the station platform and falling between the two cars, embraced in the sixth claim, but it is not involved in the present suit.

The patent in suit, which is found at page 57 of the record, says:

> "In many classes of railway cars, and particularly in those used

upon the elevated and other city railways, it has been found necessary, in order to prevent passengers from falling from the train, and also to prevent persons from attempting to get off or on a car while in motion, to provide the entrances to the car platforms with gates, by which they can be closed except at the proper times. These gates are usually in charge of a guard or attendant, whose duty it is to close the gates before the train commences to move, and to open them only after the train has come to a full stop. As there is usually but one guard or attendant stationed between each two adjoining cars, it follows that to open or close both gates he must pass around from one to the other of the adjoining platforms. This passing from one platform to the other, besides being a source of annoyance to the guard, occasions some delay, which is very annoying to the passengers, particularly at times when a large number are required to get off or on a car in a very short time.

"It is the object of the present invention, among other things, to provide means by which the guard or attendant can, without changing his position, open or close both gates simultaneously and with the least possible delay.

"To that end one feature of the invention consists in providing the gates with connections so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passageway leading from one of the cars to the other."

In figure 1 of the drawings is shown a plan view of the adjoining platforms of two cars, showing the gates upon one side open, and those upon the opposite side closed, the gates being provided with an opening and closing apparatus embodying the present invention. Figure 2 is a side elevation of figure 1, showing one of the gates at the left hand open, and the other at the right hand closed, while figure 3 shows and illustrates a modification of the invention.

The specification says :

"Referring to said drawings, it is to be understood that A A represent two ordinary railway cars, and B B the adjoining platforms thereof, C C being the usual entrances from the station platform, and D D gates of the ordinary construction for closing said entrances. The gates D are hinged, in the usual manner, to posts *a*, rising from the corners of the platforms and close against the usual jams (not shown), projecting from the sides of the cars. The platforms B are provided, as shown in Fig. 1, with the usual guard railings, *b*, extending inward from the posts *a* to similar posts *c*, which are located a sufficient distance apart to leave a passage way, G, from one car to the other. When the gates are thus arranged, it is neccessary, as will readily be seen, in order to close or open both gates, for the guard to pass from one platform around the post *c* to the opposite platform, thus causing some delay in opening or closing one of the gates, and adding to the labor of the guard, and causing annoyance to the passengers.

"In order to avoid this each of the gates is provided, at a suitable distance from its hinge, with a curved lever *d*, which extends rearward and terminates a short distance outside of the railing *b*. This lever is connected by a link, *e*, with a rod, *f*, which slides freely in or on a suitable bearing, as *g*, secured to the railing *b*, and is provided at its inner end with a handle, *h*, by which it can be operated. From this arrangement it will be seen that the guard or attendant, while standing in the passageway G, can, by grasping the two handles, *h*, and pushing or pulling the rods *f*, open or close both the gates simultaneously and without loss of time. The rods *f* will preferably be provided with some form of locking mechanism by which the gates can be fastened in their opened or closed positions. Such locking may be accomplished by having the handles *h* pivoted to the rods *f*, as shown in the present case, and provided with extensions *i*, which can be turned so as to extend in front of the posts *c* and hold the gates closed, as shown at the top of Fig. 1, or so as to lie in the rear of lugs *k* and hold the gate open, as shown at the bottom of said figure. Although it is preferable that the rods *f* and links *e* should be arranged upon the outside of the railings *b*, as shown in Fig. 1 and 2, as in this position they will be entirely out of the way, and will not prevent the gates from swinging back against the railings *b*, yet this arrangement is not necessary. The rods and links may, as shown in Fig. 3, be arranged upon the inside of the railings, in which case the levers *d* may be dispensed with, the links *e* being attached directly to the gates."

The specification then describes certain other modifications and also the second improvement in which a gate is employed in the space between the platforms, which it is unnecessary to explain.

It will thus be seen that the invention consists essentially in the combination with a gate arranged to close the side entrance to a car platform, with the platform guard rail at the end of the platform, and an operating handle arranged at or near the inner end of this guard rail, with means connecting said gate and handle, consisting of a rod sliding on guides on said guard rail and a link connected to the gate and said rod, or the mechanical equivalents of such means described or known. By reason of this combination and arrangement the attendant can open and close the gate while standing at the end of the guard rail out of the way of passengers entering or leaving the platforms, and by this combination and arrangement when there were at least two cars, the one attendant can operate both gates from his position at the inner end of the guard rail, whereby he can retain control of the gates while the cars are in motion and prevent passengers from falling from or attempting to get off the train, and also from attempting to or getting onto the cars while they are in motion, in which he is assisted by the locking devices with which the handles are provided.

As the guard does not have to pass around from one platform to the other to open and close the gates he can open and close the gates more rapidly, thus permitting longer stops at the stations, has more leisure to look out for the passengers entering and leaving the cars, to pull the bell-rope, to signal the engineer in going ahead, and to perform other duties such as looking out for signals and the safety of cars, than where such combination and arrangement is not used.

The claims involved in this suit are as follows:

"1. The combination, with a gate arranged to close the side entrance to a car-platform, of an operating-handle located at or near the inner end of the platform guard-rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard-rail, substantially as described.

"2. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of operating handles located at or near the inner ends of the platform guard-rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard-rails, substantially as described.

"3. The combination, with a railway car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a gate for closing said entrance, a rod, as *f*, sliding in or on guides secured to said guard-rail, and a link, as *e*, connected to said gate and rod, all substantially as described.

"4. The combination, with a railway car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a swinging gate for closing said entrance, a rod, as *f*, sliding in or on a guide secured to said rail, a link, as *e*, connected to said gate and rod, and means for locking said gate in its closed position, all substantially as described.

"5. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of rods, as *f*, sliding in or on guides secured to the guard-rails of said platforms, and links, as *e*, connected to said gates and rods, substantially as described."

IV.

Infringement.

Renwick, appellant's expert, testifies at page 49 as follows:

"Now, after having examined carefully all the models and ex-
" hibits, I cannot find that any of them gives the slightest sugges-
" tion of the idea of a handle located on or near the guard rail, as
" before set forth, so that a guard might stand out of the way of
" entering and leaving passengers, and operate the gate on that side
" of the car which is nearest the station platform, nor do any of
" them give the slightest hint of locating two such handles and
" their gate operating apparatus on the adjacent guard rails of two
" adjacent cars, whereby the guard can not only keep out of the
" way of incoming and outgoing passengers from two cars, but
" also open or shut either gate without leaving or substantially
" altering his position in the passageway, or near thereto."

This is also shown by the following testimony of Brevoort, appellee's expert:

"20 x-Q. (p. 91). Do you find the combination specified in the
" first claim of the Rosenfield patent in any one of the structures
" to which you have referred as existing prior to the date of his
" patent?

"A. I do not.

"21 x-Q. Do you find the combinations specified in the second,
" third, fourth and fifth claims in any one of the structures to

" which you have referred as existing prior to the date of his
" patent ?

" A. I do not.

" 28 x-Q. (pp. 92–93). Do you find in any of the patents referred
" to any means by which an attendant, standing in the passageway
" leading from one car to another, and at the end of the platform
" guard rail could, without shifting his position, open and close the
" gates of the side entrances to the platform ?

" A. In none of the patents ; no.

" 29 x-Q. Do you know of any means having been used for accomplishing this result prior to the adoption of the means now
" used upon the elevated railroad ?

" A. No.

It thus appears that there is nothing in the prior state of the art which in any way limits the scope of either one of the five claims in suit.

There can be no doubt from the following considerations that the apparatus of the cars of the appellee contains the same combination and arrangement of parts, having the same mode of operation and producing the same results, as is claimed in the five claims of the patent in suit.

The apparatus is shown in Complainant's Exhibit Defendant's Gates (Qs. 7–9, p. 9), which is a small model.

It is also shown and described clearly in an application for a United States patent, filed May 21, 1884, by T. W. Peeples, master mechanic of the appellee (x-Q. 39, p, 109), as appears from the deposition of Renwick (Q. 11, p. 53). This application is printed at pages 71–77, the drawing appearing on the latter page.

The drawings figures 1 and 2 of this Peeples' application show the same views of the apparatus as in figures 1 and 2 of the patent in suit, and the same parts are indicated by the same letters in both the Peeples' drawing and the drawing of the patent in suit.

The specification of the Peeples' application says (p. 72):

" The gates D are hinged in the usual manner to posts *a*, rising

> from the corners of the platforms, and close against suitable stops projecting from the car body. The platforms B are provided, as shown, with the usual guard-rails *b*, extending inward from the posts *a* to similar posts *c*, which are located a sufficient distance apart to leave a passageway G, from one car to the other. When the gates are thus arranged it is necessary, as will readily be seen, in order to close or open both gates, for the guard to pass from one platform around the posts *c*, to the opposite platform, thus causing some delay in opening or closing one of the gates and adding to the labor of the guard and causing annoyance to the passengers. In order to avoid this each of the gates is provided, at a suitable distance from its hinge, with a link *d*, which is hinged to the gate at d^1, while its other end is connected to a sliding piece *e*.
>
> This piece *e* slides upon the guide or rail e^1, which latter is fastened in a substantially horizontal position to the guard rail *b*, as shown. To the piece *e*, is also pivoted a link *f*, the opposite end of which is connected with the arm *g*, of a bell crank lever G, turning on a pivot set in the guide e^1 near the inner end of the railing *b*.
>
> The other arm g^1, of the bell crank lever G is provided with a handle *h*, by which it can be operated. From this arrangement it will be seen that the guard or attendant, while standing in the passageway G, can by grasping the two handles *h* and turning the levers G, in one direction or the other, open or close both gates simultaneously and without loss of time. The mechanism will preferably be provided with some form of locking means by which the gates can be reliably held in their closed positions. Such locking may be accomplished by having a fixed stop *i*, set in the guide e^1, or in the fixed guard railing *b* in such position that when the lever G is thrown fully over to close the gate the arm *g* will be arrested by said stop *i* in such position that the pivot g^2 will be slightly beyond the dead point below the line connecting the pivots g^3, e^2, so that a pressure brought upon the gate tending to open the same will be transmitted through the parts *d e f* to the point *i*, which, not being able to yield, will effectually resist the undue opening force."

It will thus be seen upon inspection that the gates are hinged in the same way and to the same posts as in the patent in suit; that the handles are arranged near the inner end of the guard rails and upon the same, and are connected by means consisting of a sliding rod and a link connected thereto and to the gate, arranged and combined with the guard rail on the inside, as shown in the modification of figure 3 of the patent in suit. There are slight structural differences in the way the handles work; those of the patent swinging in a plane at right angles to the guard rail, while those of the appellee in a plane parallel to the guard rail, and the mode of locking is slightly different. These differences, however, are not material, as they do not change the mode of operation or result attained and are obviously merely colorable.

Again, Behrens, who, as we have stated, was an Examiner in the Patent Office in charge of the class in which the improvements in dispute come, and who is an expert competent to express an opinion upon the question of similarity of devices, testifies at pages 10–13 that the apparatus of the cars of the appellee clearly contains the combinations and arrangements of devices claimed in the five claims of the patent in suit.

Renwick also testifies in answer to question 4, p. 48, that the apparatus of the appellee contains the invention of the said claims of the patent in suit.

Brevoort, appellee's expert, points out certain structural differences, to which we have referred, between the appellee's apparatus and that claimed in the five claims of the patent in suit, but he does not express the opinion, nor does any other witness, that such apparatus does not contain the improvements claimed in said claim.

Again, when Peeples made his application for a patent his attorney on the 19th of May, 1884, stated that the claims would be found to interfere with those of the patent in suit, and requested that an interference be declared between the application and said patent (p. 71). He was master mechanic of the appellee, and of course knew that the apparatus of his company shown in his application was substantially the same as that claimed in the patent in suit. The Patent Office declared an interference on the 27th of August, 1884, between Peeples' application and the patent in suit, thereby deciding that the apparatus of the appellee shown in said Peeples' application was substantially the same as the apparatus of the patent in suit.

It is, therefore, clear that the appellee has pirated the improvements claimed in said claims, and there is no evidence in the record upon which to base an argument that it has not appropriated the same.

V.

Prior Invention and Use.

Webster testifies that he was employed by the appellee as master of car repairs in the year 1878, remaining in such position until the year 1881, from which time he was general foreman (Q. 2, p. 105). That up to the month of November, 1882, there were in use on the cars of the appellee, gates, some of which were hinged to the body of the car and some were hinged to posts at the end of the guard rails, but which had to be opened and closed directly by the guard (Qs. 4–6, p. 106), who had to step first on to one platform to open one gate and then on to the other to open the other gate (x-Q. 44–46, p. 110).

Shannon testifies to the same effect in answer to Qs. 9–14, pp. 116, 117.

Webster further testifies that the drawings were first made of the apparatus complained of, employed by the appellee on its cars, on the 3d of June, 1882, when patterns were commenced which were sent to the factory on July 16, 1882, and the first car was fitted up with the apparatus on November 4, 1882 (Qs. 7–14, p. 106). That from November 4, 1882, other cars were continually equipped with such apparatus at the rate of from four to twenty cars a week, until such cars which were known as "Standard" cars were all equipped (Q. 9, p.

106). That Peeples, to whom we have already referred, and who made the application for a patent a copy of which appears at pages 70–77, was the originator of this apparatus or system, employing a draftsman to design it (x-Qs. 31–33, p. 109).

Caille, a draftsman in the employ of the appellee, testifies that he made drawings for this apparatus on the 3d of June, 1882, from orders given him by Peeples (Qs. 1–6, pp. 117, 118). Caille also testifies that he made a rough drawing about April, 1882, as near as he can fix the date, before he made the drawings of June 3d, 1882, but he does not produce this rough drawing nor account for its absence, nor does he fix the date with any certainty as being as early as April, 1882. The earliest date, therefore, to which the appellee can pretend to a prior invention or use of the apparatus in controversy is when the drawing was made June 3d, 1882.

All of this testimony relating to the use prior to the date of the patent in suit was properly objected to by the appellant, and a motion was made to amend the answer setting up prior use by the appellee, which was denied by the Court below, as we have shown in the abstract of the case heretofore given. It certainly is not admissible because of the lack of notice required by Section 4920 of the Revised Statutes in the answer. It is immaterial, however, whether it be considered or not upon the question of prior use and invention, in view of the fact that Rosenfield had invented the improvements claimed in the five claims of his patent in suit, long before the earliest date any of these witnesses testify to. But it is very instructive and suggestive, as we shall show further on, and for this reason we have so fully referred to it.

Rosenfeld, the inventor of the improvements of the patent in suit, on the other hand, shows that long prior to this he had made the invention embraced in the five claims of the patent in suit, had described it to others and had used reasonable diligence in applying for his patent therefor. He testifies that while employed by the Edison Electric Light Company, during the summer of 1881, he made such invention and illustrated it in a drawing which was lost or accidentally destroyed. Concerning what this drawing showed, he testifies as follows (pp. 15, 16):

" 13 Q. Please explain just what this drawing which you made in the summer of 1881, represented?

" A. It represented a gate opening, closing and locking mechanism. It consisted of a link connecting the gate with a connecting rod, with operating and locking handles on said connecting rod; also a locking lug; also a bearing to support and guide said connecting rod.

" 14 Q. To what part of the car was the gate hinged?

" A. To the platform guard-rail.

" 15 Q. Which way was this gate arranged to swing—inward or outward?

" A. It was arranged to swing inward.

" 16 Q. And where was this guide or bearing for the connecting rod located, and to what was it secured?

" A. It was located on and secured to the guard-rail.

" 17 Q. And were all these features, which you have described, fully illustrated in the drawing which you made in 1881, so that any one familiar with mechanical structures and drawings would have understood the construction of the apparatus as you have described it?

" Objected to as leading.

" A. Yes.

" 18 Q. Now, please describe briefly the operation of the apparatus which was illustrated in this drawing?

" A. It was arranged so that by pushing or pulling the operating handle the gate would be opened or closed, and by means of the same handle it could be locked when closed.

" 19 Q. Where was the guard or attendant to stand in opening and closing the gate?

" A. At the inner end of the guard-rail.

" 20 Q. Will you please look at Fig. 3 of the drawing of your Letters Patent No. 288,494, and state how it compares with the drawing which you made in 1881 and which you have just been describing?

" A. It is substantially part of my drawing of 1881.

" 21 Q. Well, what more did your drawing of 1881 show than Fig. 3 of your patent?

"A. It showed the mechanism as being also on the outside as well as the inside of the guard-rail.

"22 Q. Then am I to understand that the drawing you made in 1881 showed the gate-opening and closing mechanism arranged in both of the positions illustrated in your patent?

"A. It did show the opening, closing and locking mechanism in the two positions shown in the patent."

He further testifies that he showed this drawing and explained it to his father and several other persons (Qs. 23, 24, p. 16). He further testifies that he made another drawing illustrating such invention in the winter of 1881–82, and showed it and explained fully what it represented to his father, Joseph Aron, the appellant, and others in the latter part of December, 1881 (Qs. 25–32, pp. 16, 17). This drawing is produced and a copy of it is found immediately preceding page 71). This drawing bears the signature of Joseph Aron in two places and also that of A. Rosenfield and the date, April 27, 1882. Two of these signatures were placed, as were stamp marks of the date of April 27, 1882, upon this drawing on the 27th of April, 1882, while the third signature was placed on there at some previous time (Q. 36, p. 17).

This drawing clearly shows the improvements described and illustrated by figures 1 and 2 of the patent in suit, as is shown from an inspection of the same and the description of the parts given by Rosenfield in answer to 153 Re-d. Q., p. 28.

Rosenfield further testifies that after making this drawing and showing it to the persons mentioned, and in the month of March, 1882, he had made in New York City a model marked Complainant's Exhibit Rosenfield Model (Qs. 33, 34, p. 17). This model is in the same condition as when originally completed, with the exception that a supplemental gate to close the space between the contiguous platforms of two cars to prevent people from falling between them had been added to it (Qs. 44–46, p. 18, and x-Qs. 90–92, p. 22). This model clearly shows the same combination and arrangement of parts as is described in his patent and shown at figures 1 and 2 of the same. This model he took to the office of his patent solicitors, giving them instructions to prepare the application for letters patent, about May 8, 1882 (Qs. 40–42, pp. 17, 18). A short time either before or after so taking the model to his patent solicitors, either in the latter part of April or the early part of May, 1882, he went with Aron to F. K. Hain, who was the general manager of the elevated railroad systems of New York, having a letter of introduction to him from J. J. Kiernan, a State Senator, taking with him the drawing before referred to and this model, and showed the same to him and explained to him fully his invention (Qs. 39, 41, 43, 44, pp. 17, 18; Qs. 53, 54, p. 19). Hain thoroughly inspected the model and drawing and thoroughly understood the invention, discussed its merits, but did not indicate that it was old or that he had ever seen it before, but said "that they had no use "for an invention of that kind; at the same time prais-"ing it as very ingenious" (Qs. 43, 47–52, pp. 18, 19). Hain, however, suggested to Rosenfield that if he would make some arrangement to prevent persons from falling between the car platforms he might use the same, and this led him to devise the supplemental gate, which was added to the model after this interview (Qs. 47, 48, p. 18). After placing this model in the hands of his patent solicitors, about the 8th of May, 1882, he gave them instructions to let the matter of preparing an application for a patent remain in abeyance because of the refusal of Hain to use the invention, there being no other roads than those of the appellee that would be likely to adopt it, and not being in very good circumstances he decided to wait till some future time before spending any money on the application (Qs. 56, 57, p. 19). He says he would have proceeded at once to apply for the patent if Hain had given him any encouragement as to the adoption of the invention by the elevated roads (Q. 58,

p. 19). About the end of the year 1882, he saw the apparatus in use by the appellee on its cars (Qs. 63, 64, pp. 19, 20), and at once instructed his attorneys to prepare the application for the patent, which was sworn to on March 29, 1883, and filed April 3, 1883, as appears from the file wrapper and contents of this application printed at pages 61-69 of the Record.

Rosenfield is corroborated by his father, Anthony Rosenfield, who testifies that between the months of June and August, 1881, his son explained to him the improvements and their advantages described and claimed in the said five claims of the patent in suit, and made a drawing, so that he could understand them and which showed such improvements, which drawing was lost (Qs. 4-13, pp. 29, 30). He further testifies that his son made the second drawing substantially like the first, four or five months after the first one and in the winter of 1881 (Qs. 14-19, p. 30), a copy of which drawing is in the record and to which we have already referred. He further testifies about the making of the model illustrative of the invention shown in the drawing, and the taking of it to the office of his patent solicitors to get them to apply for a patent on the same, and he identifies the Exhibit Rosenfield Model as the one (Qs. 20-24, p. 30).

Aron also corroborates Rosenfield, the inventor. He testifies that Rosenfield first explained to him his improvements as early as the begining of the year 1882, and that very shortly thereafter showed him a drawing illustrating the invention and explained the same to him with its advantages fully (Qs. 2-5, p. 34). He identifies the drawing, a copy of which appears in the record to which we have already referred, as the one so shown to him, and he knows that he saw this drawing before the 27th of April, 1882, as his signature at the right hand thereon was placed there before the one under that date (Q. 7, p. 34). He did not fully understand the invention from the drawing and asked

Rosenfield to have a cheap little model made, which he did, and it was shown to him a few days afterwards (Q. 5, p. 34). After he had seen this model, he fully understood the operation of the invention (Qs. 10–14, p. 35). This model, he testifies, was shown to different persons, among them being Senator Kiernan and Hain (Q. 15, p. 35). He further testifies that he saw Senator Kiernan, showed him this model, asked him if he knew Hain, which he did, and received a letter to Hain, and with it and Rosenfield went to see Hain, when Rosenfield showed the model and explained the same to Hain, who listened very attentively and then said: "Well, that's no account. What we are looking "for is to have something between the cars." Hain did not at this interview give him to understand that the invention was not new. This interview was about the month of May, 1882, as near as he can fix it (Qs. 16, 17, 19, pp. 35, 36).

Hovey also corroborates this testimony, testifying that on the 8th of May, 1882, the Exhibit Rosenfield Model was brought by Rosenfield to the office of his solicitors, where Hovey was employed, and the invention illustrated by it was then explained fully to Hovey, together with the advantages attending its use, and instructions were given to proceed at once and file the application, but these instructions were withdrawn until very early in the year 1883, when instructions were given to at once prepare the application for the patent in suit, the delay in filing it being due to getting a drawing made (Qs. 1–4, pp. 32, 33).

From this brief review of the testimony bearing upon the question of prior use by the appellee, it is clear that Rosenfield invented the improvements described in the patent in suit and claimed in the first five claims of the same, illustrated them by drawings and showed them and explained them to various persons so that they could understand them, as early as the summer or fall of the year 1881, made a second drawing after the first was lost, which was shown to his father and Aron, the appellee, prior to April 27, 1882, and which drawing fully and clearly shows the said improvements, and that he made a model in March, 1882, which also showed these improvements; that this model and the drawing that was preserved were used to explain the invention to Hain, the general manager of the appellee, The Manhattan Railway Company, who declared that it was of no use and suggested the making of something to prevent the passengers from falling between adjoining platforms, which occurred in the month of May, 1882; that very shortly after this interview and on the 3d of June, 1882, drawings were made of similar apparatus by the draftsman under the orders of the master mechanic of the appellee, that patterns were made and completed and sent to the factory by July 16, 1882, for such apparatus, and that the first car was fitted up with such apparatus on the 4th of November, 1882, and that continually thereafter, at the rate of from four to twenty cars a week, the apparatus was applied on what were known as "Standard" cars until all were equipped by that company. In the meantime Rosenfield, discouraged by what Hain had said, in effect that the company had no use for any such invention, and being without money, instructed his patent solicitors not to proceed with the preparation of the application, until after he saw that he had been duped by Hain and that the invention was a very useful one and had been seized by the company and put into use on its cars, which came to his knowledge in December, 1882, when he at once asserted his right to the invention by instructing his patent solicitors to prepare the application, which they did as soon as they could, which was sworn to on the 29th of March, 1883, and filed in the Patent Office on the 3d of April of that year.

Certainly it cannot be said that his delay under these circumstances from the time he showed his invention and explained it to Hain in May, 1882, to the very early part of 1883, amounted to an abandonment of it. Certainly under the circumstances, from the time he explained it and made drawings and models of it, he used reasonable efforts to introduce it into use in the only place where it would likely be used and used diligence in applying for his patent upon the same.

VI.

Patentability of the Subject Matter.

Twenty-one patents and two prior structures have been introduced in evidence in the attempt to show that no invention was required in making the improvements claimed in the said five claims in the patent in suit.

As we have shown heretofore in the abstract of the case, only six of these patents were set up in the answer and no notice was given as required by Section 4920 of the Revised Statutes respecting the use of the two old structures, and upon a motion being made to amend the answer to introduce the other fifteen patents and the prior notice as to the two old structures, it was denied by the Court below.

As appears conclusively from the testimony of Brevoort, the expert for the appellee, and of Renwick, the expert for the appellant, which we have quoted at page 10, no one of the combinations and arrangements of devices claimed in the said five claims of the patent in suit, producing the results produced thereby and having the advantages of the same, is found in any one of the prior structures or patents, each of such combinations and arrangements being undoubtedly novel and useful.

In the brief and oral argument in the Court below it was contended, however, that because of this all of these patents and these prior uses could be used to show the state of the art, although not set up in the answer, to form the basis of an argument that there was no patentability in the subject matter of the said five claims in view of the same; and as the same use will undoubtedly be made of them before this Court we shall consider them as being properly in the record.

In considering this question an analysis and dissection of each of the twenty-one patents and of the two old structures, showing exactly the construction and operation of each of them, and their mode of operation and the changes necessary to adapt them for use with the gates of railway cars, so as to make the combination and arrangement of devices embraced in the five claims, none of which changes are suggested or hinted at in any way in either the prior patents or structures, would not materially aid this Court in arriving at a conclusion upon this question. It will be sufficient to refer to those principally relied on by the expert for the appellee as types of the others, and if in view of those so selected by him, invention was required, it would certainly be in view of the others.

The Brown patent (p. 125), the Douglas patent (p. 127), the Kidder patent (p. 130), the Gibbs patent (p. 137), the Corrigan patent (p. 161), and the Kelso and Ludewigs patent (p. 162), all describe devices for opening and closing shutters from the inside of the room.

The Stephenson patents No. 1 (p. 141), No. 2 (p. 143), No. 3 (p. 148), the Clark patent (p. 152), which is an English one granted as a communication from Stephenson, the Castor patent (p. 128), the Brill patent (p. 146), the Hart patent (p. 171), and the Little patent (p. 172), all describe different contrivances whereby the rear door of a car is opened and closed from the front platform where the driver stands, by him; the Smith patent (p. 133) shows an arrangement of devices whereby the driver of a carriage can unlatch the door so that it can be opened through one set of mechanism and can be closed through another set of mechanism from his seat; the Cooper patent (p. 139) sets forth devices for unlatching the doors by a shaft extending the length of a train so that they can be opened and also through other mechanism worked from said shaft, closed; and the Ferguson patent (p. 164) shows a mechanism for opening a farm gate, located at some distance from the approach to it and closed by gravity.

The Madison and McLaughlin patent (p. 131) and the Moore & Thompson patent (p. 150), show cars with gates at the platform entrances.

The Wollensak patent (p. 135) shows devices for opening and closing the transom of a door for ventilation, and the locomotive cab models show devices for opening and closing doors or small windows also for ventilation, while the Miller and Jennings car coupling devices show only levers arranged on the ends of the platform to uncouple the cars.

Concerning all these old structures Mr. Henry B. Renwick testifies as follows:

"4 Q. (p. 48). Have you read and do you understand the contents of Complainant's Exhibit Complainant's Patent, being U. S. Patent No. 288,494, and, if so, state whether or not the invention therein set forth and claimed for opening and closing the gates of railway cars is found in any or all collectively of the exhibits referred to in the previous question, giving your reasons for any opinion you may express?

"A. I have frequently examined the Rosenfield patent and understand the invention therein described and referred to in the claims thereof, and in speaking of it will omit all reference to that part of the invention which provides means for closing the spaces between two adjoining platforms, because that part of the invention is not, as I understand it, involved in this controversy. I have seen frequently, and carefully examined in operation in the City of New York, elevated railroad cars provided with this invention of Rosenfield's;

"The whole of the last sentence is objected to by counsel for defendant, as involving a conclusion of law and not a mere statement of fact or opinion.

" not in the precise form shown in the drawing, but in the form shown in Complainant's Exhibit Defendant's Gate. Prior and since the introduction of such gate, and more carefully within the last two or three months, I examined the mode of operating gates on the same railroads, which were not provided with the Rosenfield invention, and the motions of the guard in operating them corresponded substantially with those described in the testimony herein, both of complainant's and defendant's; there being no one place in which the guard was able to stand and perform all the operations necessary in opening and closing the gates of two adjoining platforms. The invention of Resenfield was primarily in the idea of locating two handles upon or near the guard rails of two adjoining cars, and in such proximity to the inner or passageway-end of this rail, that the guard standing in the passageway could not only reach and act upon both of these handles simultaneously and without changing his position, but could also by means of proper connections between their handles and the gates open or close both gates simultaneously or at different times without leaving his position in the gangway. Of course the mere idea was not an invention, but Rosenfield went further and provided proper means of combining the gates with the handles, as set forth in his patent, and the patent shows operative machinery for carrying out the original idea. I do not understand that the first and second claims of the patents are limited to any particular mechanism for making the operative connection between the handles and the gates so long as these means are known substitutes of or equivalents for the means specially described in his patent, or suggested as modifications of these means. But, nevertheless, there are certain limitations of the invention: First, the handles must be on or near the guard rails for two reasons, first, to be out of the way of the incoming or outgoing passengers; and second, to be within reach, simultaneously if necessary, of the two hands of the guard standing in the passageway or near thereto. Second, the gates must swing into or onto the platform to open, and outwards over the floor of the platform to shut, provided they are swinging gates. If the gates, as suggested, be sliding gates, then it is evident to any person who has looked into the subject, that the gates must lie alongside of the car body when open, and must, in closing, slide from the car body endwise from the car toward the guard rail, because there is no room between the car platforms for such sliding gate, and consequently they cannot lie between the platforms when open. Now, after having examined carefully all the models and exhibits, I cannot find that any of them gives the slightest suggestion of the idea of a handle located on or near the guard rail, as before set forth, so that a guard might stand out of the way of entering and leaving passengers, and operate the gate on that side of the car which is the nearest the station platform, nor do any of them give the slightest hint of locating two such handles and their gate-operating apparatus on the adjacent guard rails of two adjacent cars, whereby the guard can not only keep out of the way of incoming or outgoing passengers from two cars, but also open or shut either gate without leaving or substantially altering his position in the passageway or near thereto.

These ideas, as before said, were the basis of the invention, and after the idea had once entered into the head of an inventor, it was easy for a competent mechanic, especially with the aid of the state of the art, to devise means for connecting the gates with the handles, so that when motion was applied to the handles it would be properly communicated in such manner as to open or close the gates. In this connection, however, it must be observed that there is not a single one of the contrivances described in any of the patents or represented in the drawings or models with the exception of the contrivance shown in Locomotive Cab Model No. 2, which could, unless more or less altered, be used to make the proper connection between Rosenfield's handle and Rosenfield's gate, so as to operate it in the proper manner; and I repeat that none of the patents, models or drawings present or even suggest the idea which lies at the basis of, and when carried out is, Rosenfield's invention; and that none of them, except Locomotive Cab Model No. 2, show any device by means of which the idea could have been carried out, unless such devices were altered and changed so as to fit them for performing the duties necessary in carrying out Rosenfield's ideas.

The connection between the handle and the door in Locomotive Cab No. 2 could be used for this purpose, provided they were connected, as shown in the model, to the gate, and not, as I understand from the testimony was really the case, to a wicket or window hinged fast to the gate; but the model, even as it stands, does not suggest or convey the idea of locating the handle in the positions, and for securing the purposes which result from Rosenfield's location of the handle; and no man, from looking at this cab model, would be led to make Rosenfield's invention, unless he has first conceived or had had suggested to him Rosenfield's idea, and probably also the advantages resulting when that idea was carried into practice.

I have no hesitation in stating that none of the old things, to which I have been referred in the question, or all, collectively describe, or even suggest, Rosenfield's invention.

The theory of the defense seems to be that as shutters, the rear doors of cars, transoms and ventilating doors for locomotive cabs had been operated by handles located at some distance therefrom and connected thereto by intermediate mechanism, there was no invention in using such old appliances with the handles located in the position where the attendant could stand in the passageway between two adjoining cars having the side entrances and thus control both gates.

A combination of old devices in which the novelty consists essentially in the arrangement or location of one of them with respect to the other has often been of the greatest utility and value, and patents therefor have been sustained both in England and in this country. A notable case is that of Seymour vs. Osborne (11 Wall, 516). The claim of the Palmer & Williams Reissue No. 1682, one of the patents there is in suit, was "The "combination of the cutting apparatus of a harvesting "machine with a quadrant-shaped platform arranged "in the rear thereof, and a sweep rake operated by "mechanism in such manner that its teeth are caused "to sweep over the platform in curves when acting on "the grain, these parts being and operating substan-"tially as hereinbefore set forth."

The state of the art prior to the invention of the combination, showed the Seymour machine in which was combined the cutting apparatus of a harvesting machine with a quadrant-shaped platform arranged in the rear thereof so that the grain could be swept in curves off from the platform; and the Nelson Platt machine which had a cutting apparatus, a quadrant-shaped platform, but not arranged directly in the rear of the cutting apparatus, and a sweep rake operated by mechanism so that its teeth were caused to sweep over the platform in curves when acting upon the grain, the latter being carried by the rake upon the ground.

All that Palmer & Williams had in effect done was to arrange the cutting apparatus of the Nelson Platt machine immediately behind the quadrant-shaped platform of that machine, the result, however, being that the grain was then delivered immediately to one side of the swath being cut so as to leave a passageway for the horses to travel without treading upon the grain cut in the next swath. Although it was strenuously contended that this required no invention, but was the result of the exercise of mere mechanical skill, this Court decided that this combination in which the quadrant-shaped platform was located or arranged in the particular place was patentable, and sustained the patent therefor.

The claims here in suit are very similar to the one so held to be valid by this Court, they being in effect to combinations of old instrumentalities in which one of them, namely, the handle, is located or arranged in a peculiar position with relation to the others to produce certain useful results and advantages.

It is shown by the evidence of Brevoort, appellee's expert, that the old devices could not be used without radical change and rearrangement to do the work performed by the combination and arrangement of devices of the said five claims, even after some one had conceived of the idea of working the gates by the attendant without having to move from the passage between the cars at the end of the guard rails out of the way of passengers, and that such radical changes required invention on the part of the person making them.

Brevoort selected the Corrigan shutter patent and the Brill patent and the Hart and Little patents relating to horse cars where the door is worked from the front platform by the driver, as being the best of all the twenty-one patents and prior uses for the purpose of enforcing the theory of the defense, because he produces a model, Brevoort No. 1, in which he has attempted to show modifications of the Corrigan apparatus applied to the opening and closing of a gate on a railroad car, and Brevoort No. 2, in which he attempts to modify the devices of the Hart and Little patents to work the gates of a railway car.

Let us examine, therefore, the Corrigan patent and the Brevoort Model No. 1, and the Little and Hart patents, and the Brevoort Model No 2, and see what these patents actually disclose and what changes and modifications were necessary to make them over into devices that could work gates when the handles were placed at the inner ends of the guard-rail.

The Corrigan patent describes, and shows in the drawings, ordinary shutters provided with hinges having pintles raised at some distance above the shutter in the ordinary way. The specification says (p. 162):

> " To the lower parts of the blinds D are pivoted the outer ends of the curved bars E, the inner ends of which are pivoted to the jointed bars F at their joints. The bars F slide in grooved slides G, let into the window-sill and passing in through the lower part of the casing.
>
> " The joints in the sliding bars F are made near their rear ends and in such positions that the forward and main parts of the side bars, when the blinds D are fully closed, may be turned along the inner side of the lower part of the casing A, as shown in Figs. 1 and 2, the outer and smaller parts of the said bars F remaining in the slides G to serve as guides to the said bars E.
>
> * * * * *
>
> " By this construction by operating the sliding bars F the blinds D may be closed and opened to any desired extent without its being necessary to raise the sash B."

Brevoort testifies as to the following changes and reorganization of the Corrigan apparatus which he had to make to operate a gate as shown in Brevoort Model No. 1:

> "35 x-Q. (p. 94). The gate shown in the model will, as you have just demonstrated, when the jambs are removed, swing outward into a position about in line with the operating rod. In a shutter-worker it is necessary, is it not, in order that the apparatus should be successful, that the shutter should be capable of swinging outward to a position considerably farther than this, that is to say, should be capable of swinging around so as to lie against, or nearly against, the wall of the building?
>
> " A. Yes.

"37 x-Q. In this respect, then, the Corrigan apparatus, as shown in the patent, is different from that shown in the model, is it not?

"A. It has the same capacity of movement as the shutter in the patent. The only difference is that the operating devices are at right angles to the gate when closed, and parallel with the gate when opened, while in the patent the operating apparatus is at right angles when closed and substantially at right angles with the shutter when the shutter is opened.

"38 x-Q. You have employed a different kind of hinge for the gate in the model from that shown for the shutter in the patent, have you not?

"A. I have employed the same kind of a hinge, but I have put it on one side of the gate, and have not supported it with brackets projecting from the gate, in which method it is supported in the patent.

"44 x-Q. (p. 95.) Suppose the position of the pivot of the hinges in the Corrigan patent were not changed relatively to the position of the operating rod and its guide, could the shutters be swung inward so as to lie parallel or substantially parallel with the operating rod?

"A. No.

"45 x-Q. It is necessary, is it not, in the case of the gate, as shown in the model, that it should swing around so as to lie substantially parallel with the operating rod, so as to not partially close the passage way to the car door?

"A. Yes.

"46 x-Q. Then you have had to change the relative position of the parts—that is, the hinge and the operating rod, in order to secure this result in the model?

"A. Yes; I have had, of course, to reorganize the Corrigan device.

"47 x-Q. Could you change the position of the operating devices—that is, the operating rod, &c., in the Corrigan structure as shown in the patent, so as to allow the shutter to open inward and lie back parallel with or substantially parallel with the operating rod?

"A. Not as the shutter is shown in the patent as hinged.

"48 x-Q. (p. 96.) In the structure shown in the Corrigan patent, as I understand it, the operating rod and link are attached to the extreme lower end of the shutter, while in the model the link and rod are attached to the gate at a point about one-fourth of its length from the top. Would it be practical or even possible to attach the operating link and rod to the shutter at a corresponding point?

"A. No, it would be possible; but would interfere with the window.

"50 x-Q. In the patent the operating link E is pivoted in a bracket or projection extending inward from the shutter, while in the model the corresponding part is pivoted directly to one of the vertical rods composing the gate; is this a difference of any importance?

"A. It enables the gate to open further than it would were it pivoted from a projection from the gate.

"51 x-Q. If the link of the operating rod in the model was pivoted to a projection extending inward from the gate as in the patent, such projection would cause the gate to stand some distance away from the end guard rail, so as to partially close the passage way leading to the car door?

"A. Yes; the gate would not open as fully as it now does.

"52 x-Q. And such position of the gate, when opened, would be objectional, would it not?

"A. It would.

"54 x-Q. As I understand the structure shown in the Corrigan patent, the operating rod F is jointed, one part of the rod always remaining in the guide G, while the other part is sometimes in the guide and sometimes entirely withdrawn from the guide, and the link E is pivoted to the operating rod at the point of the joint. Is there any such construction as this shown in the model?

"A. The link is pivoted to the rod in the model, but the rod is not arranged to swing at right angles to its line of motion.

"55 x-Q. In other words, it is not jointed?

"A. No.

"59 x-Q. (p. 97.) If you had reproduced the jointed rod, as shown in the patent in the model, would not the free end of the rod, which is entirely withdrawn from the slide when the shutter is closed, have been liable to swing away from the guard rail, so as to be a very objectionable feature in the gate operating mechanism?

"A. Yes.

"60 x-Q. From what you have just said, I understand that you were obliged, in reorganizing the apparatus shown in the Corrigan patent so as to produce the construction shown in the model, to convert a house into a railway car, a window opening into the side entrance to the car platform, remove the window therefrom, convert one of the pair of shutters into a gate, hinge that gate in a different relation to the walls of the structure, employ a different form of hinge, locate the operating rod in a different relation with respect to the hinge, connect the rod and the link to the gate in a different position vertically of the gate, omit the projection shown in the patent to which the link is pivoted, and pivot the link directly to the gate, use a rigid rod instead of a jointed one, and that all of those changes were essential in order to produce a gate and operating mechanism which would be practically successful for use upon cars?

"A. I have made the changes enumerated. I do not think I needed to have made all recited in the question, but to make a thoroughly practical job, almost all of the changes had to be made.

"61 x-Q. Do you find any description in the Corrigan patent which suggests or describes any of these changes?

"A. No."

Renwick testifies regarding these changes in answer to question 8 as follows (p. 52):

> "I have examined the part of the model referred to and have read the deposition of Mr. Brevoort regarding the changes made in transforming the apparatus of the Corrigan patent into the Corrigan model, and such changes as he testifies to have been made in making said model."

The Hart patent (p. 171) describes and shows devices for operating the rear entrance door of street cars by the driver on the front platform. These consist of a crank handle or lever G projecting from the front platform of the car back of the driver, but so that he can by turning, reach the same, which is secured to a rock-shaft extending the length of the car to the rear, where it is provided with a crank lever *f* secured thereto, to the outer end of which is pivoted a rod *e* the other end of which is pivoted to a lug *d* on the door. By turning the crank handle G the crank lever *f* is vibrated so as to open and close the door.

The Little patent (p. 172) describes contrivances for the same purpose, which are substantially as follows: On the front platform where the driver stands, there is a vertical shaft R provided at its upper end with a crank *r*, and at its lower end beneath the platform with a drum O around which ropes are wound, passing over pulleys and throughout the length of the car, and connected with a sliding door so that when the driver rotates the drum through the crank *r* the ropes are moved and with them the sliding door at the rear of the car.

Renwick testifies as to the following changes and reorganization of the contrivances of the Hart and Little patents which Breevoort had to make to operate the gates as shown in Breevoort Model, No. 2. In question 7 (p. 50), he is asked—

"Mr. Brevoort, defendant's expert, says that the 'Hart Gate' and its opening and closing devices is an almost literal copy of the Hart Patent No. 163,770; while the 'Little Gate' is almost a literal copy of that which is shown in the patent to Little No. 140,052. What is your opinion with reference to those statements by him?

"A. A comparison of the two contrivances with the two patents demonstrates easily that the opinion is not a correct one. In the Hart patent the operating handle sticks out from the end of the car body, where it would be directly in the way of passengers getting on and off, if passengers were admitted to the front platform on a bob-tail car, such as is set forth in this patent, whereas in the Brevoort model the handle is fastened in Rosenfield's position upon the guard rail. In the patent the handle revolves in a vertical plane, and must do so, whereas in the model the handle revolves in a horizontal plane.

In the Hart patent the shaft, which is partially rotated by the handle, is a horizontal shaft, and extends the whole length of the car from front to rear, while in the model the shaft moved by the handle is a vertical shaft, does not extend from end to end of the car, but is entirely outside of it, and is mounted upon the guard rail. In the Hart patent the toggle which moves the door works up and down in a vertical plane, and is enclosed in the hollow of the rear wall of the car, whereas in the model the toggle which moves the door, moves in a horizontal plane, is located outside of the car and beneath the platform. In the Hart patent the toggle is connected to the back of the door itself, and about the middle of its height, and in the model it is connected to a rod depending from the bottom of the door.

"In the Hart patent the toggle when extended or while being extended tends to shut the door; in the model the toggle while being extended or opened into a straight line tends to open the door. All parts of the contrivance are changed in position relatively to each other, except the relative position of the two arms of the toggle. By means of these transmutations a contrivance for opening the rear door of a car by the driver standing on the front platform and the whole length of the car from the door is transformed into an apparatus by means of which a guard can open, not a car door, but the platform gate of the very platform upon which he is standing, and finally, when the contrivance of the Brevoort model has thus been transformed, it would be useless, because when cars were turning on curves and the corners of their platforms were coming in contact, or nearly so, and sliding past one another, as I know by observation that they do, then the toggles of one car when the gates were shut would strike the toggles of the other car, and one or both of them be broken.

"Turning now to the 'Little Gate' end of Brevoort model No. 2, and comparing it with the patent, it appears that in the model the transverse sliding door of the car has been transformed into a longitudinally sliding platform gate; second, that the handle and drum of the Little patent have been transferred from the opposite end of the car to the same end of the car on which the door is mounted; third, that two of the pulleys of the Little patent n^1 and p have been dispensed with; also, that the arrangement of the cords has been altered, the cords forming nearly a quadrangle in the Little patent, and a triangle in the model, and by means of these transformations a contrivance for opening a rear door from a front platform, has been converted into a contrivance for operating a platform gate from the same platform that the gate closes, and not from the opposite end of the car. It may be said, in answer to these comments upon the Brevoort model No. 2, that if you suppose the floor of the Little patent car to be a platform of an ordinary car, and thus turn the whole apparatus around 180 degrees bodily so that the car door of Little becomes a platform gate, that then the model would correctly represent the Little patent under the supposition just stated; but this is not so, because in that event the handle r and shaft R of the Little patent, would stand directly in the centre of the platform, measuring from the car to the platform rail, and two such handles and shafts, which would be necessary on a car, would practicularly (although it might be possible to squeeze past them) prevent the egress and ingress of passengers.

"In the Brevoort model the handle and crank have been shifted from this supposed position of Little to the platform rail, and thereby all the advantages of the Rosenfield invention have been obtained.

"I repeat that both Little and the Hart patent provide means for operating the rear car door by means of a handle operated at the opposite end of the car, and that they have been transformed in the Brevoort model into contrivances for operating a platform gate by means of a handle on the same end of the car; and not only this, but further, the handles have been located in the position defined by Rosenfield, so that all the advantages accruing from his invention have been attained; and I will say in conclusion that neither the Hart nor Little patent contain any hints or suggestions of changes made by Mr. Brevoort, or of any other changes by means of which the Hart and Little contrivances could be transformed so as to anticipate Rosenfield's invention.

"8 Q. Have you examined that part of the model Brevoort No. 1, marked Corrigan Gate, and have you read that part of Mr. Brevoort's deposition in this case having special regard to those portions which refer to changes that have been made in the model from the apparatus shown in the Corrigan patent; and, if so, state whether such changes have been made in said model?

"A. I have examined the part of the model referred to, and have read the depositions of Mr. Brevoort regarding the changes made in transforming the apparatus of the Corrigan patent into the Corrigan model, and such changes as he testifies to have been made in making said model."

It will thus be seen that there is no suggestion in either the Corrigan patent or the Hart and Little patents of the great number of changes that were made by Brevoort in attempting to apply these devices to the opening and closing of car gates controlling side entrances to end platforms of cars and so that the attendant could stand in the passageway at the inner end of the guard rails and operate the gates there-through without moving.

It is obvious that considerable contrivance and ingenuity, indicating the exercise of the inventive faculties, was employed to make these changes and transform these old devices into the combinations and arrangements found in the Brevoort Models Nos. 1 and 2.

In support of this also Mr. Renwick testifies as follows:

"9 Q. (p. 52) In your opinion would it have required invention to have made the changes from the apparatus of the Hart, Little and Corrigan patents, to convert such apparatus into the apparatus of the Hart and Little Gates of Brevoort Model No. 2, and the Corrigan Gate of Brevoort Model No. 1 respectively, prior to the date of the Rosenfield patent?

"A. Yes; I have no doubt it would."

As the old devices of the Corrigan, Hart and Little patents could not be used without material modifications or changes, not suggested in either of these patents, to do the work performed by the patented improvements, even after these improvements had become known to Brevoort, a skilled mechanician, and which changes and modifications undoubtedly required invention to make, it can justly be assumed that invention was required to make the said improvements, in view of these old structures.

Undoubtedly Brevoort selected from the old structures those of the Corrigan, Hart and Little patents, as requiring less modification and change and reorganization to convert them into the contrivances of his models and make them something like the combinations and arrangements of devices claimed in the patent in suit, than any of the other old structures, and it would, therefore, seem unnecessary to consider the other different structures patented and unpatented that are set forth in the eighteen other patents and are shown in the old structures, namely, the locomotive cab contrivances and the Miller and Jenney car coupling apparatus.

Again Webster testifies (p. 109) as follows:

"34 x-Q. Were any other plans submitted or tested by Mr. Peeples or others to your knowledge, for gate opening mechanism to accomplish the same result as that accomplished by the mechanism now used before this mechanism was finally adopted and put into use?

"A. Yes, we had an arm and bell crank lever attached to the railing and gate.

"35 x-Q. This apparatus was only tested and not put into use, was it not?

"That is all.

"36 x-Q. It proved unsatisfactory, did it?

"A. Yes, sir; it was unhandy.

"37 x-Q. From what you say I understand then that you and others connected with the elevated railroads had for some time prior to the final putting into use of the present mechanism, considered that a mechanism which would accomplish this result would be a desirable thing?

"A. Yes.

"38 x-Q. And there had been some considerable experimenting done with the view of providing such mechanism; had there not?

"A. There had.

"39 x-Q. Who ordered this mechanism shown in the drawing Defendant's Exhibit Drawing of Defendant's Gate-Operating Mechanism, to be applied to the cars?

"A. It was applied under my supervision. I received instructions to apply it from Mr. Peeples, the master mechanic.

"40 x-Q. Do you know whether or not Mr. Peeples received instructions in regard to applying this mechanism from Mr. Hain.

"A. I do not positively; but undoubtedly he did.

"41 x-Q. Mr. Hain knew that it was being applied, did he not?

"A. Yes, sir."

It thus appears that for some time prior to the introduction upon its cars by the appellee of the patented improvements, Webster and others, employed by the appellee, had considered that a mechanism that would accomplish the result accomplished by such improvements would be a desirable thing, and considerable experimenting was done with a view to producing a mechanism of this kind, and attempts were made to accomplish this result by the use of an arm and a bell-crank lever, but it was not satisfactory, and it was not put in use.

Of course both Peeples and Webster must have had a knowledge of the transom lifters, the locomotive cab window openers and closers, the shutter operating devices, the street car appliances where the driver opened and closed the rear door from the front platform, and of the other structures which were in common use, but they derived no benefit from such knowledge as these old structures did not enable them to make the combination and arrangement of devices claimed in the patent in suit, but, on the contrary, with all the knowledge they had of all these old contrivances they failed, after attempting to devise some mechanism that would produce the same result as these combinations and arrangements. It is, indeed, very singular that within a month after the patentee had shown his model to Hain, the drawing of the apparatus employed by the appellee should have been made on the 3d of June, 1882, and that this apparatus was immediately put into use, although for four years before that the appellee had nothing of the kind on its cars, and the only explanation is that at that time the light that was needed to produce the combinations and arrangements of devices was obtained from the patentee by Hain, who, as Webster says in the testimony we have quoted, undoubtedly gave instructions to Peeples to apply his mechanism.

Again, that these improvements were not obvious is shown by the fact that where other persons prior to the patent in suit did apply devices to work the gates controlling side entrances to platforms, they arranged the operating handle against the end of the car body, and not at the inner end of the guard rails, as is seen by the Moore & Thompson patent (p. 150), which was known to the Patent Office when the patent in suit was granted, and it was cited against the application therefor when filed.

Again, three witnesses, one Renwick, the other two, Webster, the general foreman, and T. W. Peeples, the master mechanic of the gigantic corporation, the appellee, prove that these improvements required the exercise of invention to produce them in view of what was old. Thus Renwick testifies, in answer to question 5 (p. 50), as follows :

> " In my opinion, as will appear from what I have stated in my last answer, invention was required to produce the apparatus described and claimed in the Rosenfield patent, and that the invention was new and patentable in view of the exhibits referred to in the last question."

The testimony of Renwick to which we have referred is not that of an ordinary expert who gives his opinion merely from a theoretical knowledge of mechanics, but it is the testimony of a man who when he gave it was 67 years old, who had been engaged in matters pertaining to civil and mechanical engineering for 50 years, who had been, as early as 1847 or 1848, and for a period of five years, a principal examiner in the Patent Office, having charge of the subject of civil engineering and land conveyances, including cars, carriages and their appurtenances, and having for 30 years been frequently in each year employed as an expert in suits in which patents were in question, and whose opinion, therefore, on a question of this kind is entitled to the greatest weight.

Webster testifies on this subject as follows (p. 109):

> "31 x-Q. Who, if you know, designed or invented the gate opening mechanism illustrated in the drawing Defts. Exhibit 'Drawings of Defts. Gate Operating Mechanism?'
>
> "A. Mr. T. W. Peeples was the originator.
>
> "32 x-Q. Did Mr. Peeples design this particular mechanism shown in the drawing?
>
> "A. I think the draughtsman designed that.
>
> "33 x-Q. When you say Mr. Peeples was the originator of this mechanism, do you mean that he was the originator of the idea of providing a mechanism for opening and closing the gates, or that he was the originator of this particular system of mechanism?
>
> "A. He was the originator of this particular system, I should say."

Peeples was not called as a witness by the appellee, but the file wrapper and contents of the application he made for a patent for these improvements is in the Record, and to which we have previously referred.

In making his application, he made oath as he had to do that the subject matter of the same was an invention.

In this same application he filed another affidavit in which be swore "that he made the invention specified "in the claims of said application before the third "day of April, 1883" (p. 75).

We submit that the opinions of Peeples, Webster and Renwick, thus expressed, in view of all the old contrivances, types of which such as the mechanism for opening and closing the door, of street cars from the front platform by the driver, opening and closing of shutters by mechanism worked from the inside of a house, the opening and shutting of transoms by devices within reach of persons, and the opening and shutting of cab windows by similar devices, and which were commonly used and which must have been well known to both Webster and Peeples when their opinions were expressed on this subject, are entitled to the greatest weight in favor of the patentability of the subject matter of the five claims in the patent in suit.

Again, the testimony of the witnesses Krom and Fagan, who were not trained witnesses or experts, but who were employed by the appellee upon its cars as guards, shows clearly the practical results and utility of the combinations and arrangements of devices of the five claims of the patent in suit, over the old devices that had previously been used by the appellee. As we have shown, there can be no doubt but what the apparatus employed by the appellee is substantially the same, containing the same combinations and arrangements of devices and producing the same results and advantages as what is claimed in the said five claims of the patent in suit, and whatever results and advantages accrue to the use of the improvements by the appellee equally accrue to those of the patent.

Krom testifies as follows:

" 2 Q (p. 37). Have you ever been employed upon the elevated railroads in this city, and if so, during about what period, and in what capacity or capacities?

" A. Yes, sir; as conductor and guard from the 24th June, 1879, to February, 1885.

" 3 Q. Are you familiar with the different gates and the manner of operating them in use upon the cars of the elevated railroads during the period when you were employed on the roads?

" A: I am familiar with those used on the Sixth avenue road which is the only one I was employed on.

" 4 Q. Please describe the way or ways in which the gates were arranged upon the cars of the Sixth avenue road, during the time which you worked upon the road?

" A.. They were arranged on hinges fastened to a post swinging in from the car to the railing.

" 5 Q. Where was this post to which the gate was hinged located?

" A. On the end of the outside corner platform.

" 6 Q. And the gates swung inward against the platform guard rails, is that so?

" A. Yes, sir.

" 8 Q. What were your duties as guard and conductor?

" A. To announce the stations, open and close the car gates; to look after the safety of passengers, to protect the train from the following trains, and to signal the time for the train to start.

"9 Q. Now, please state how many gates each guard or conductor had under his control?

"A. Four.

"10 Q. And how many was he required to open and close each time a train stopped at a station?

"A. Two.

"11 Q. These two gates that he opened and closed at a time, were the two adjoining gates upon different cars, as I understand it, and not the two gates of the same car; am I correct?

"A. Yes, sir.

"12 Q. Now, please explain just how the guard or conductor would open or close these two gates when a train stopped at a station?

"A. He would have to open one gate, step on the next car and open the other; stand one foot on each car and close both gates at the same time.

"13 Q. Could he open both gates simultaneously, or without changing his position?

"A. No, sir.

"14 Q. And could he close both gates at the same time without changing his position?

> Objected to as indefinite as to what is meant by a change of position.

"15 Q. Question repeated, with the addition that 'by changing his position' is meant stepping from one position to another, not merely moving his body or arms without changing the position of his feet.

"A. Yes, sir.

"16 Q. Please explain just how he could do this?

"A. Standing one foot on each car, one hand on each gate, and giving the gates a gentle push.

"17 Q. Would he actually move the gates into their closed position by keeping hold of them until they were closed, or would he simply push them so that they would swing closed?

"A. He would push them so that they would swing closed.

"18 Q. Were there any changes made in the gates on the cars upon the Sixth avenue road during the time which you worked upon that road, and, if so, what was the first change that was made?

"A. Yes, sir. The first was locks upon the gates. The second was a spring latch. The third was a lever lock.

"27 Q. (P. 39). You have spoken of a spring latch with which the gates were provided subsequently. Now please describe how how this was arranged?

" A. A small rod with a ring on the outside of the gate passing through the gate and caught on the gate catch.

" 28 Q. By gate catch you mean a catch on the end of the car, I suppose?

" A. Yes, sir.

" 29 Q. After the gates were provided with these spring latches, were they kept locked or fastened closed between the stations?

" A. Not at all times.

" 30 Q. Was it intended that they should be; were the catches provided for that purpose?

Same objection as to question 21.

" A. Yes, sir. That was our orders to keep them closed.

" 31 Q. By closed I suppose you mean fastened or latched?

" A. Yes, sir.

" 32 Q. Was there any reason that you know of why the gates should have been kept latched or fastened, except while they were opened to let the passengers get on or off?

" A. Yes, sir; for the safety of the employees.

" 33 Q. Please explain how the leaving of the gates unlatched was likely to endanger the employees?

" A. By rounding corners frequently the gates would swing open of their own accord unnoticed.

" 34 Q. Was there any reason that you know of why it was desirable that the gates should be kept latched or fastened up to the time they were opened by the guard or conductor to allow the passengers to get off and on, and should be again latched or fastened as soon as they were closed after the passengers had got off and on and the train was ready to start?

" A. Yes, sir. As passengers would frequently try to open the gates after the train had started.

" 35 Q. Was there any reason why passengers should be prevented from doing this?

" A. Yes, sir, for their own safety.

" 36 Q. Did passengers ever try to open the gates and get on the cars as the trains were entering stations, and before they had come to a full stop?

" A. Yes, sir.

" 37 Q. This was also dangerous, I suppose?

" A. Yes, sir.

" 38 Q. You say that you had orders to keep the gates fastened, except at such times as they were open to allow passengers to get on and off, and you also say that this was not always done. Why was it that the order was not strictly obeyed, if you know?

" A. Negligence on the part of the employees; it consumed time to open them at the stations after the train had stopped.

" 39 Q. Please explain how it consumed time?

" A. By first opening one gate, stepping on the next car to open the other gate.

" 40 Q. Did it involve any additional labor aside from this loss of time?

" A. Yes, sir.

" 41 Q. And was it this additional labor and loss of time that caused the employees to sometimes fail to keep the gates fastened?

" A. Yes, sir.

" 42 Q. You have spoken of a lever-locking mechanism that was subsequently applied to the cars on this road. Will you now explain briefly how this mechanism was arranged and operated?

" A. (Witness, upon being shown Complainant's Exhibits Defendant's Gates, says:) It is the same mechanism shown in this model.

" 43 Q. As I understand, you operated the gates when they were unprovided with any locking mechanism; also when they were provided with the locks; also when they were provided with the spring latches, and also when they were provided with the mechanism shown in the model which you have just referred to. Now, please state briefly what, if any, advantages you found in using the mechanism shown in the model?

" A. A saving of time, labor and the safety of passengers.

" 44 Q. Please state how the mechanism to which you have referred effects a saving of time?

" A. By standing in one position you can open and close car gates without any over exertion.

" 45 Q. Do you mean that you can open and close the gates quicker by the use of this mechanism than you could under any of the arrangements that had before existed?

" Objected to as leading. Question withdrawn.

" 46 Q. Does the fact that a car conductor can open the gates by standing in one position effect a saving of time?

" Objected to as indefinite as to what time is referred to; whether the time of the stoppage of the train or the time of the employee's labor.

" A. Yes, sir.

" 47 Q. Will you now please explain what you mean by a saving of time?

" A. Conductors are allowed a certain number of minutes to make a trip, and the time is determined from terminus to terminus, and unless they make their time they delay the following trains, which is liable to crash in their train unless proper signals are displayed at the rear end of the train, which is impossible to do and look after the safety of passengers getting on and off the train at the same time.

"48 Q. Does this gate-operating mechanism aid the conductors in making the required running time, and if so, how?

"A. Yes, sir. They are allowed to carry a certain number of passengers in each car of the train, and by using this lever lock they can keep passengers from getting on or off at any station.

"49 Q. In your 43d answer, you state that the use of this mechanism effects a saving of time, and in your 46th answer you state that this saving is effected by reason of his ability to open both gates by standing in one position. Now please explain just what you mean by a saving of time. A saving of time over what?

"A. What I mean by a saving of time is as regards to running time; using the lever-lock gate, they can be handled quicker and to a better advantage than a gate without any lock or fastening.

"50 Q. What do you mean by your lock or fastening in your last answer?

"A. Those used previous to the lever-lock?

"51 Q. And does this quicker handling of the gates effected by the use of this lever-lock give more actual running time to the train between stations?

"A. Yes, sir.

"52 Q. Now, why is it that the conductor or guard can handle the gates quicker with this mechanism than he could before?

"A. Because they are handier and can be worked easier, and can be handled both gates at the same time.

"53. Q. Now, please explain how it is that the use of this mechanism effects a saving of labor!

"A. Because they can be handled standing in one position.

"54 Q. Can you give me any idea by comparison or otherwise, of about how great a saving of labor is effected by the use of this mechanism?

"A. I should say there is two.thirds.

"55 Q. Now, please state how this mechanism gives greater safety to the passengers?

"A. After the gates are closed they cannot be opened by passengers.

Fagan testifies upon the subject as follows:

"2 Q. (p. 44). Have you ever been employed upon the elevated railroads in this city, and if so, during what period, and in what capacity or capacities?

"A. Yes, sir; I have been employed by the elevated railroad for about four and a half years, ending August, 1884, in the capacity of brakeman and conductor.

"3 Q. Upon what line of road did you work?

"A. On the Sixth Avenue Elevated Railroad.

"6 Q. Please describe the way in which the gates upon the cars were arranged, and how they were operated when you first worked upon the road ?

" A. The gates were fixed so as to open toward one another, and when closed they fastened with a spring catch which was connected with a rod running the length of the gate, and opened by a short handle screwed to the rod.

" 9 Q. (p. 45). You say that they were provided with spring catches connected to a rod running the length of the gate, and that this rod had a handle. Where was this handle located with relation to the hinge of the gate ?

" A. It was located a few inches below the upper hinge.

" 10 Q. What were your duties as brakeman and conductor ?

" A. The duties of a brakeman or conductor were to take charge of two cars, and he was held responsible for all that occurred on those cars while on duty.

" 11 Q. Please state what, if anything, it was your duty as brakeman and conductor to do, in connection with the gates used upon the cars ?

" A. The duties of brakeman or conductor are to open and close the gates at every station on the road.

" 12 Q. How did the conductor or brakeman operate the gates when they were arranged in the manner you have described, and were provided with the spring catches to which you have referred ?

" A. In going into a station he stepped to one platform and opened the catch of the gate, and then stepped back to the other platform and opened the other catch, and when the train had come to a stand still he would open both gates.

" 13 Q. In opening both gates in this manner, was he obliged to step first on to one platform to unfasten and open one gate, and then on to the other platform to unfasten and open the other gate, or could he unfasten and open both gates from the same position ?

" A. The gates could only be opened by stepping on each platform to open them.

" 14 Q. You say that the guard or conductor would step on to one platform and unlatch one gate and then on to the other platform and unlatch the other gate, and then after the train had come to a stop would open both gates. Was it considered safe and proper to unlatch either of the gates before the train came to a stop?

" A. No, sir; but it was done to save time, as it took too much time to unlatch and open them after the train had stopped.

" 15 Q. Why was it considered unsafe to unlatch either or both of the gates before the train came to a stop ?

" A. It was considered unsafe to unlatch the gates before coming to a stop on account of the habit passengers had of trying to get on the train before it had stopped.

" 16 Q. Was there any change made in the gates, or the manner of operating them, while you were employed on the road, and if so, what was it ?

"A. Yes, sir; there was. There was a new patent attached to the gates which enabled them both to be opened at the one time.

"17 Q. Please explain what you mean by a new patent; do you mean to say that the apparatus was patented?

"A. I mean that it was a new fastening that was attached to the gates, and it was understood on the road that it had been patented by the company.

"18 Q. Please describe briefly what this new apparatus was, and how it operated?

"A. An iron attachment which was secured to both gates and which allowed them both to be unfastened and opened at the same time.

"19 Q. (p. 46.) Where did the breakman or conductor stand to operate the gates by means of this attachment?

"A. He stood in the centre of both platforms and operated both gates standing in the one position.

"20 Q. Will you please look at the model I now show you, marked Complainant's Exhibit Defendant's Gates, and state whether or not it represents the apparatus to which you have just referred?

"A. Yes, sir; it does.

"21 Q. In your experience as a guard and conductor, did you find that the apparatus to which you just referred for operating the gates, possessed any advantages over the old system?

"A. Yes, sir; a great many.

"22 Q. Please state what advantages you found it to possess?

"A. It had the advantage of being safer than the old arrangement and that accidents were not liable to happen when passengers were trying to board the cars before the trains would come to a stand. And it took a great amount of labor off the conductor or brakeman.

"23 Q. Please explain how it took labor off the conductor or brakeman?

"A. Under the old arrangement the conductor or brakeman had to pass backward and forward, from platform to platform, to open the gates, whereas, under the new arrangement, by standing in the one position he could open and shut his gates.

"24 Q. Did you find it effected any saving of time in the opening and the closing of the gates to use this apparatus?

"A. Yes, sir; the trains were enabled to make better time on the heavy trips morning and night."

It thus appears that the duties of a guard on the appellee's cars includes the opening and closing of two car gates on adjoining cars, looking after the safety of passengers, protecting the train from the following trains and signaling for the train to start; that before the introduction of the patented improvements upon the appellee's cars the gates were only provided with spring latches, and to open these the guard had to step onto the platform of one car to open one gate and then step onto the platform of the other car to open the other gate; that the orders were that these gates were to be kept latched or fastened closed between stations for the safety of employees, and to prevent passengers from trying to open the gates after the train had started; but that they were not at all times so locked or fastened, because it consumed time to unlatch them at the stations after the train stopped, because of the necessity of stepping first on the platform of one car and then on the other, and also involved additional labor; that the adoption of the patented improvements saved labor because the guard could open and close the gates while standing in one position, and saved time because, as the gates could be opened and closed quickly, this enabled the passengers to get on and off quickly, and thereby gave more running time between stations, obviating to this extent the delay of the following train or liability of crashing into the preceding one; it gave greater safety to the passenger, because after the gates were closed they could not be opened by passengers trying to get on while the cars were in motion.

The utility of the combination of devices wherein the handles are located or arranged at the inner ends of the guard rails, as shown by the consequences or advantages arising therefrom, from the evidence of these practical men, is very considerable.

The master mechanic, Peeples, and the general foreman, Webster, of the appellee, must have seen what advantages would be derived from the employment of the patented improvements, for immediately after the drawing was made on the 3d of June, 1882, of the devices as used by the appellee, the patterns were hurriedly made, being completed and sent to the factory on the 16th of July, 1882, six weeks afterwards, and the first car was equipped on the 4th of November, 1882, as testified to by Webster, and that continually from November 4, 1882, the patented improvements were applied to what were known as the "Standard" cars at the rate of from four to twenty cars a week until all that class of cars were provided with the same, as shown by the testimony of Webster (Qs. 7-13, p. 106), to which we have above referred.

One test as to whether invention was required in the production of a particular patented subject matter is that quoted by this Court in Smith vs. Goodyear Company (93 U. S., 495), where it says:

> "Webster, on the subject matter of Patents, page 30, says: 'The utility of the change, as ascertained by its consequences, is 'the real practical test of the efficiency of an invention, and, since 'the one cannot exist without the other, the existence of the one 'may be presumed on proof of the existence of the other. Where 'the utility is proved to exist in any degree, a sufficiency of invention to support the patent must be presumed.' We do not say the single fact that a device has gone into general use, and has displaced other devices which had previously been employed for analogous uses, establishes in all cases that the later device involves a patentable invention. It may, however, always be considered; and, when the other facts in the case leave the question in doubt, it is sufficient to turn the scale.

Again, this Court in the case of Webster Loom Co. vs. Higgins (105 U. S., 591), says:

> "It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result never attained before, it is evidence of invention."

Tested by these rules the great advantages due to the employment of the patented improvements over the old devices that had been used for four years previously by the appellee, and the introduction immediately into use of such improvements after they were applied to the first car, as rapidly as from four to twenty cars a week until all the "Standard" cars were equipped, if there should be any doubt on the question of patentability of these improvements, should solve that doubt in favor of the patentee.

We submit, therefore, that in view of all the considerations we have presented, invention was required to produce the combination and arrangement of devices claimed in the said five claims.

April 17, 1889.

M. B. Philipp,
Of Counsel for Appellant.

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Supreme Court of the United States,

No. 43.

JOSEPH ARON,
Appellant,

vs.

THE MANHATTAN RAILWAY COMPANY,
Appellee.

BRIEF FOR APPELLEE.

Supreme Court of the United States.

JOSEPH ARON, Appellant, vs. MANHATTAN RAILROAD COMPANY, Appellee.	No. 304.

Brief of Argument for Appellee.

I.

Statement of the Case.

This suit was brought by the Appellant in the United States Circuit Court for the Southern District of New York, because of the alleged infringement by the Appellee of United States Patent No. 288,494, granted November 13, 1882, to the Appellant, as assignee of W. W. Rosenfield, for an alleged Improvement in Gates for Railway Cars.

It is claimed that the infringement was perpetrated upon the cars of the elevated railway in the City of New York.

His Honor Judge Wallace dismissed the complaint upon the ground that the alleged improvement in controversy was not a patentable improvement. From his decision this appeal was taken.

Appellee argued at the prior hearing and contends now:

1.—That the subject matter of the patent is not patentable in view of the prior state of the art.

2.—That the subject matter of the patent was set forth, except as to mere matters of detail, in prior patents enumerated in defendant's answer.

3.—That none of the claims of the patent, when construed to cover the details of mechanism which constituted the only novel features, has been infringed.

II.

What the Patent Covers.

The improvement is entitled in the patent "An Improvement in Gates for Railway Cars."

As his Honor Judge Wallace held (p. 181):

> "The patent relates to gates of cars in which the passengers get on and off at the sides of the platform, the gates being arranged to close the side entrances to the car platform except when the passengers are getting off and on. Such cars are in use upon the elevated railways in the City of New York."
>
> "The patent described two improvements in these gates, only one of which is involved in this controversy. This consists in operating mechanism by which the guard or attendant upon the platform of the car, while standing out of the way of incoming or outgoing passengers and in the passageway between two cars, can simultaneously open and close the gates of both cars."

Let us see now what is set forth in the patent as to the improvement in issue. In the initial statement it is said (p. 58) that:

> "In many classes of railway cars, and particularly in those used upon the elevated and other city railways, it has been found necessary, in order to prevent passengers from falling from the train, and also to prevent persons from attempting to get off or on the cars while in motion, to provide the entrances to the car platforms with gates, by which they can be closed except at the proper time. These gates are usually in charge of a guard or attendant, whose duty it is to close the gates before the train commences to move, and to open them only after the train has come to a full stop. As there is usually but one guard or attendant stationed between two adjoining cars, it follows that to open or close both gates he must pass around from one to the other of the adjoining platforms."

It is to be observed that this statement concedes that cars used upon the elevated railways had, prior to the alleged improvement, been provided with gates; that two such cars had been coupled together, and that it was common for "one guard or attendant stationed between two adjoining cars" to operate the gates belonging to the adjacent platforms.

In the detailed description illustrated by the drawing, we are informed

> "that A A represent two *ordinary* railway cars and B B the adjoining platforms thereof, C C being the *usual* entrances from the station platform and D D gates of the *ordinary* construction for closing said entrances. The gates D are hinged in the *usual* manner, to posts *a*, rising from the corners of the platforms and close against the usual jambs (not shown) projecting from the sides of the cars. The platforms B are provided, as shown in Fig. 1, with the *usual* guard-railings, *b*, extending inward from the posts *a* to similar posts, *c*, which are located a sufficient distance apart to leave a passage-way G., from one car to the other."

(The italicizing is ours).

The drawings show two cars coupled in the ordinary way.

It is, therefore, admitted that Rosenfield, the alleged inventor was not the originator of guard-railings, or of guard railings constructed with a central passage way, or of passages at the sides of cars, or of gates hinged at the ends of the guard-railings to control these side passages. All these admissions are also made in Rosenfield's testimony (p. 24). What Rosenfield sought to accomplish, as the specification states, was to improve this type of cars so as

> "to provide means by which the guard or attendant can, without changing *his position*, open or close both gates simultaneously and with the least possible delay."

This amounts to an admission that cars of the type just described had previously been coupled together, and that a guard or attendant had a recognized position, for it shows that the object of the invention was to obviate the necessity for *changing* the position of the guard or attendant.

If we may be pardoned for digressing to glance at the proofs, we will pause, for a moment, in the consideration of the patent, to show what the position of the guard or attendant upon the cars on the elevated railways had been. Appellant's own witnesses testify that the guard or attendant always stood in the passageway at the center of the guard-railings of two adjoining cars (p. 38 and p. 45) and that the facility with which he could operate two gates depended very materially upon his height. The proofs show (p. 25, x Q. 115) that Rosenfield knew that this was the position ordinarily occupied by a guard or attendant upon cars coupled into trains upon the elevated railway.

Turning again to the patent, we find the statement (p. 58) that,

> "One feature of the invention consists in providing the gates with connections, so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passageway leading from one of the cars to the other."

It will be seen that this is a statement of but an idea, or a mere abstraction. All that is set forth is the providing of the gates, in some manner not defined, with connections of some kind, not defined, arranged in any way so long as the arrangement will enable the gates to be simultaneously opened and closed by the guard while standing in the position which he had always occupied.

The claims of the patent will be found as abstract as the statement of invention. But to properly appreciate the scope of the claims, it will be necessary to further consider the detailed description of the specification.

It is said (p. 59) that the gates D are shown in the drawing as hinged in the *usual* manner to posts of the guard railings. But this manner of hinging the gates is not made essential, for it is explicitly said (p. 59): "The gates may be hinged at their opposite ends, so as to lie against the body of the car when open," and it is even said that, "In some cases, also, it may be preferable to provide sliding instead of swinging gates." We are informed that instead of having the means or "connections" for transmitting motion to the gates, arranged upon the guard-railings, as illustrated in the drawings, in conjunction with the gates hinged to the guard-railings, the means or "connections" may be placed beneath the platforms, and that this is particularly true of gates hinged to the car bodies and of sliding gates.

We are told (p. 59) that in the example of the improvement illustrated by the drawing

> "Each of the gates is provided, at a suitable distance from its hinge, with a curved lever, *d*, which extends rearward and terminates a short distance outside of the railing *b*."

And we are further informed that such

> "lever is connected by a link, *e*, with a rod, *f*, which slides freely in or on a suitable bearing, as *g*, secured to the railing,

> **b, and is provided at its inner end with a handle, h, by which it can be operated."**

Then it is said that the arrangement of the rods *f*, and links *e*, "upon the outside of the railings *b*, as shown in Figs. 1 and 2," is merely a preferable arrangement and that

> **" the rods and links may, as shown in Fig. 3, be arranged upon the inside of the railings, in which case *the levers d may be dispensed with*, the links e being attached directly to the gates."**

We find, therefore, an explicit disclaimer of a lever *d*, as an essential element of the alleged improvement. This disclaimer is of importance because it goes to show the very abstract nature of the improvement as *claimed*.

It is further stated (p. 59) that

> **" the links *e* and rods *f* may be . . . . located beneath the platforms and operated by pivoted levers, the upper ends of which will occupy substantially the positions of the handles *h*."**

The arrangement of the links *e* and rods *f* is, therefore, made absolutely immaterial. The provision that levers *d* may be employed between them and the gates and that instead of the handles *h*, which are shown, there may be employed lever handles, also makes it immaterial how the handles are supported and with what other parts the links *e* and rods *f* shall be used.

While pointing out that the alleged improvement was but a mere abstraction, we ask the attention of the Court to the fact that Rosenfield only saw fit to illustrate the simplest application of the improvement which could possibly be made. We refer to the arrangement of mechanism upon the guard railings between gates hinged in the usual manner to the ends of the guard railings and the place always occupied by the guard or attendant, namely, to the passage-way at the centre of the guard railings.

Given the cars constructed with a passage-way at the centre of the guard railings and gates hinged to the ends of theguard railings so as to control the side passages, and a knowledge that the guards had always stood in the passage-way at the centre of the guard railings, how could any mechanic fail to provide the means for operating the gates from the place occupied by the guard or attendant, and arrange the operating handles upon the guard railings, even while exercising only the most ordinary mechanical skill? Is it possible to conceive of any other location for the operating handles.

The more difficult applications of the alleged improvement and the only ones which could have required any ingenuity, namely, those which required mechanism to be extended down beneath the car platforms, Rosenfield omitted to describe in detail or to illustrate.

It is important to note that locking mechanism is made wholly optional (middle of p. 59).

Now, bearing in mind the explicit proviso that Rosenfield was not to be limited to gates hinged at the ends of the guard-railings, or even to hinged gates arranged in any way, and remembering his explicit statements that he was not to be confined to any particular location of the links *e* and rods *f*, whether upon the guard-railings or beneath the platforms of the cars, or to any particular parts co-operating with the links *e* and rods *f*, either between them and the gates or between them and the central passage-way in the guard-railings, and recollecting that he made locking mechanism optional, let us look at the claims.

The first claim is for,

> "The combination, with a gate arranged to close the side entrance to a car-platform, of an operating-handle located at or near the inner end of the platform guard-rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard-rail, substantially as described."

It will be observed that this claim is not limited to any particular kind or arrangement of gate; nor to any particular kind of an operating handle, but covers broadly any kind of a handle located *at* or *near* the inner end of the platform guard-rail. It is therefore comprehensive enough to include any devices or mechanism between a handle so located and a gate of any kind. Can a more abstract claim be imagined? Limitations cannot be imposed by reference to the specification because the statements of the specification already commented upon are equally broad and loose.

This claim is not limited to locking mechanism, hence it cannot be extolled for advantages which inhere exclusively in the provision for locking a gate.

The second claim is for,

> "The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of operating-handles located at or near the inner ends of the platform guard-rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard-rails, substantially as described."

This claim will be seen to have all the abstractness of the first. It is precisely like the first, except that it calls for two similarly equipped cars, whereas, the first is confined to a single car. Locking mechanism is unessential. This second claim assumes a patentable combination between two cars coupled together in the ordinary manner, simply because when they are thus coupled, the gate operating mechanism of both happens to become accessible to a guard or attendant standing in the passage-way through the guard-railings, a position which he had long previously occupied, and occupied for the purpose of operating with the greatest possible facility two gates at the same side of adjoining cars.

The third claim is for,

> "The combination, with a railway-car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a gate for closing said entrance, a rod, as *f*, sliding in or on guides secured to said guard-rail, and a link, as *e*, connected to said gate and rod, all *substantially* as described."

Manifestly this claim is not limited to any particular kind or arrangement of gate.

In one respect, this claim is much broader and more abstract than either the first or second. It is not, like the first and second, limited to an "operating-handle located at or near the inner end of the platform guard-rail." In it no mention is to be found of any operating-handle, much less does it locate one. It is reasonable to suppose that this claim was purposely drawn without limitation to any location for a handle. It was drawn so that it would apply equally well to cars of the kind illustrated in the drawing and to cars which were not run in trains. In this respect it harmonized with the introductory statements in the specification, for it will be seen that in the first paragraph after the formal preamble, care was taken only to refer *particularly* to cars used upon "the elevated and other city railways," and it will be observed that in the statement of the object of the invention it is simply stated that the object was, "*among other things*," to provide for the operation of the gates of two adjoining cars by one guard or attendant.

Clearly the statements in the specification as to the possibility of connecting a link and rod either directly or indirectly to a gate of the kind shown in the drawing, apply to this claim. They materially increase its abstract nature.

If we consider that the statements of the specification as to the possibility of locating a rod *f*, and a link *e*, in a variety of places, even beneath the platform, and that the statements as to the possibility of connecting such parts to a handle of the kind shown in the drawing or to another kind of handle called a lever handle, apply to this claim, it becomes still more abstract. A realization of the necessity for devising some mechanism intermediately of such a rod and link and the gate, for co-operation with the rod and link when arranged as suggested in the specification (p. 59, next to last paragraph), beneath the platform, will be necessary to a full appreciation of this abstractness.

True, this claim refers specifically to a rod and a link and requires in terms that the rod shall slide in or on guides secured to the guard-rail. But this is all. And there is nothing to preclude the guides from being secured *to* the guard-rail when the rod is located beneath the platform. The claim is in effect, for the use of a sliding rod and a link in any and all kinds of mechanism for operating a gate.

The claim is not even limited to *the* sliding rod *f*, or to *the* link *e*, but is limited only to a sliding rod *as f*, and a link, *as e*, in other words, limited only to a sliding rod as, for example, the rod *f*, and a link as, for example, the link *e*.

The statements of the specification must be considered in connection with this claim, for the claim makes it requisite that the so-called combination shall be *substantially* as described, thus making it comprehend and revert back to all the suggestions of modifications set forth in the detailed description, which are consistent with its terms.

In brief, this claim is for any kind of a railway car having an end guard-rail, any kind of a gate for closing the entrance at the end of the guard-rail, and for any kind of sliding rod (the rod *f* being a mere example), and for any kind of a link (the link *e* being a mere example), in any mechanism for operating the gate.

Of course the Court will not ignore the limitation in this claim, to a *sliding* rod, or the fact that the claim is not limited to a handle having any particular location.

Merrill *v.* Yeomans, 4 Otto, 568.
Keystone Bridge Co. *v.* Phoenix Iron Co., 95 U. S., 274.
Miller *v.* Brass Company, 104 U. S., 350.
Water Meter Co. *v.* Desper, 101 U. S., 332.
Gage *v.* Herring, 107 U. S., 640.
Fay *v.* Cordesman, 109 U. S., 420.
White *v.* Dunbar, 119 U. S., 47.
Weir *v.* Morden, 125 U. S., 98.

It will be seen that this claim is not limited to any locking mechanism, hence to it cannot be attributed any advantages which are due to the locking of the gate.

The fourth claim is for,

> "The combination, with a railway car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a swinging gate for closing said entrance, a rod, as *f*, sliding in or on a guide secured to said rail, a link, as *e*, connected to said gate and rod, and means for locking said gate in its closed position, all substantially as described."

The fourth claim is of precisely the same scope as the third, except that it is limited to a *swinging* gate, is limited to but *one* guide, instead of guides, for the sliding rod, and is limited to "means for locking" the gate. Like the third claim, it is not restricted to a handle having any particular location, nor indeed to a handle. Of course, it only covers means for locking a gate when employed in connection with a *sliding* rod.

The fifth claim is for,

> "The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of rods, as *f*, sliding in or on guides secured to the guard-rails of said platforms, and links, as *e*, connected to said gates and rods, substantially as described."

This claim, it will be seen, calls for at least two gates, and for some kind of sliding rods working in *guides secured to* the guard-rails of two car platforms.

The sixth claim is not in controversy. It relates to a gate extending *between* two cars.

In conclusion, it will be seen that the first and second claims are for mere ideas or abstractions involving *in* an old type of car, provided with an old style of guard-rail and an old style of gate, and on which a guard always occupied a position in the passage-way through the guard rail, *the arrangement of an operating handle in the only place where it could be arranged* to afford any advantage, and any kind of means for connecting with the gate the handle located in this obviously necessary position. It may be remarked that the second claim differs from the first only in that it describes two cars coupled together in the ordinary manner, as having their gate operating mechanisms in combination. As to these claims, nothing can be said respecting benefits derived from locking, because locking mechanism is unessential. The remaining claims, 3, 4 and 5, are for abstractions in that they cover any kind of a sliding rod, and any kind of a link, in any kind of a car-gate operating mechanism, irrespective of any location of a handle.

The patent is simply for the *idea* of providing for operating the gates at the sides of car platforms, more conveniently from a certain place which had already been adopted as the position for the guard or attendant. This was the sole idea. It was nothing more or less than to enable the guard or attendant, from his accustomed place, to reach the gates better than he would otherwise be able to do, and the patent seeks to cover by the first and second claims any and every means which can be employed for this purpose, and by the third, fourth and fifth claims, any and every gate operating mechanism, regardless of the place whence it shall be operated, providing it shall comprise some kind of a sliding rod and a link.

It seems to us that the patent is bad upon its face. We fail to see that any patentable invention is defined by these claims.

III.

How do Appellant's Proofs Define the Alleged Improvement?

Appellant's testimony defines the invention as an abstraction. Rosenfield, the alleged inventor, testifies (p. 23, x Q. 105):

> "The invention consisted of suitable mechanism that would enable a person to open or close or otherwise operate a gate, that closes the side entrance of a railway car platform,

> or to lock the said gate when shut *when the person is situated at a distance therefrom.*"

Appellant's expert, Mr. Renwick, testifies (p. 49):

> "I do not understand that the first and second claims of the patents are limited to any particular mechanism for making the operative connection between the handles and the gates." "The invention of Rosenfield was primarily in the idea of locating two handles upon or near the guard-rails of two adjoining cars, and in such proximity to the inner or passage-way end of this rail that the guard standing in the passage-way could not only reach and act upon both of these handles simultaneously and without changing his position, but could also, by means of proper connections between their handles and the gates, open or close both gates simultaneously, or at different times, without leaving his position in the passage-way." "These ideas, as before said, were the basis of the invention, and after the idea had once entered into the head of an inventor, it was easy for a competent mechanic, especially with the aid of the state of the art, to devise means for connecting the gates with the handles." "The handles must be on or near the guard-rails for two reasons—first, to be out of the way of incoming or outgoing passengers; and, second, to be within reach, simultaneously if necessary, of the two hands of the guard standing in the passage-way or near thereto."

In these quotations we have transposed some of the sentences, but believe we have not improperly severed any sentence from the context. We think this shows that Appellant's expert has intimated that in his opinion there was a necessary place for the handle; that given the position for the handle, it was easy for any mechanic especially by the aid of what existed in the art, to provide suitable operating mechanism; that the first and second claim cannot in his opinion be regarded as limited to any particular mechanism so as to exclude mechanism previously existing; and that the only thing which can be pointed out as in anyway meritorious, was the locating of the handles. His showing that there was but one place where the handle could be located, in addition to the self-evident fact that the handle must be in the place most convenient for the guard to reach it, would seem to deprive of any merit the location of the handle at the end of the guard-rail.

Mr. Renwick (p. 54) entertains the opinion that there is a patentable difference between the subject matter of the second claim and that of the first. Even if the testimony upon such a point were proper, this testimony does not commend itself very favorably because none of the reasons which Mr. Renwick advances have any force, in view of the fact that the guard had long previously to any invention by Rosenfield, occupied precisely the same position that it is contemplated he shall occupy when using Rosenfield's alleged improvement, and in view of the fact that it was therefore, obvious that, gate operating mechanism, to afford him any facility, had to be extended to within his reach. Moreover, Mr. Renwick's statement that the guard-rail was the only place where it could be located, disposes, we think, of the suggestions which he advances in behalf of the second claim. As a matter of fact this was the only place. No other has been suggested as possible. How, then, can the location confer patentability? It is upon this location that appellant's counsel bases all his claims, and therefore all his arguments are based upon the idea that a patent for doing a thing which any mechanic must have done in applying a mechanism affording provision whereby the attendant or guard occupying the old position could operate the gates without reaching over to them.

IV.

The Decision of the Court as to the Abstract Nature of the Alleged Improvement.

His Honor Judge Wallace (p. 184), said :

> " The patentee located the rods on bearings secured to the guard-rails with their handles near the passage way formed by the space or opening near the middle of the guard-rail. If this required invention his improvement was the proper subject of a patent. He did nothing more and nothing less than this. It seems impossible to doubt that any competent mechanic, familiar with devices well known in the state of the art, could have done this readily and successfully upon the mere suggestion of the purpose which it was desirable to effect.
>
> " When it was done as to one car platform it was only requisite to duplicate it upon another to make the improvement of the patentee in all its length and breadth."

V.

Is an Abstract Idea Patentable ?

This Court said in Rubber-Tip Pencil Company *v.* Howard, 20 Wall, 507: " Idea is not patentable."

VI.

The Advantage of the Alleged improvement.

It will doubtless be contended that proof has been offered to show that the patented improvement is very useful. It is claimed that it secures safety to passengers, that the labors of the guards or attendants are lessened, and that trains are enabled by it to run on better time. The latter claim is ridiculous in view of the showing (p. 42) that the schedule time has never been changed since the introduction of this mechanism, and the showing that the trains are made up of cars, some of which have this gate-operating mechanism and some of which have not. It has not reduced the number of attendants necessary (p. 42).

But has any utility in the alleged improvement been shown? The evidence of utility relates exclusively to the utility of a mechanism not shown in the patent. All this evidence relates to Appellee's gate-operating mechanism. This is a very different mechanism. Unlike the mechanism set forth in Appellant's patent, it does not consist of one contrivance for imparting motion to the gate and another and additional contrivance for locking the gate-moving device, but Appellee's mechanism comprises a bell-crank lever and a swinging link, which not only serves to move the gate, but which operates automatically to lock the gate in closing it. It may be well conceived that Appellee's mechanism requiring but a single movement to close and lock the gate, and comprising a lever which could be operated as a very powerful agent in closing a gate against the attempts of a passenger to open it, would prove highly efficient, and nevertheless, the mechanism figured in the appellant's patent, which requires the guard or attendant to close a gate by one contrivance and afterwards to lock it by the manipulation of a second device, would not be at all efficient or even susceptible of practical use.

There is no evidence showing that the mechanism illustrated in the patent could be practically used.

Therefore, we say that the appellant stands before this Court without any evidence showing utility *in what is set forth in the patent*, except it be evidence showing utility in the abstract idea of employing some kind of gate-operating mechanism regardless of what is illustrated in the patent. The only evidence there is concerning the utility of the mechanism shown in the patent is directly against the appellant (p. 35, fol. 60 + p, 123)

Granting, for the sake of argument, great utility in what is set forth in the patent, the appellant must show more than that in order to uphold his patent. He must show that the production of the alleged improvement involved the exercise of the inventive faculty.

In Atlantic Works *v.* Brady, 107 U. S., 192, this Court said:

> "The process of development in manufactures creates a constant demand for new appliances, which the skill of the ordinary head workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention somewhat above the ordinary mechanical or engineering skill is distinctly shown, is unjust in principle and injurious in its consequences.
>
> "The design of the patent laws is to reward those who make some substantial discovery or invention, which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It was never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures."

This doctrine was affirmed in Phillips *v.* Detroit, 111 U. S., 608.

In the case of Hollister *v.* Benedict & Burnham Co., 113 U. S., 59, great utility was shown in the patented improvement, and this Court said:

> "Such an increased utility, beyond what had been attained by devices previously in use, in cases of doubt, is usually regarded as determining the question of invention. But in the present case we are not able to give it such effect."
>
> "The idea of detaching that portion of the stamp, with the double effect of destroying the stamp by mutilation and preserving the evidence of the identity of the package on which it had first been placed in use, which is all that remains to constitute the invention, seems to us not to spring from that intuitive faculty of the mind put forth in the search for new results, or new methods, creating what had not before existed, or bringing to light what lay hidden from vision; but, on the other hand, to be the suggestion of that common experience, which arose spontaneously and by a necessity of human reasoning, in the minds of those who had become acqainted with the circumstances with which they had to deal."

In the case of Thompson *v.* Boisselier, 114 U. S., 1, the Court said:

> "So, it is not enough that a thing shall be new, in the sense that in the shape or form in which it is produced it shall not have been before known, and that it shall be useful, but it must, under the Constitution and the statute, amount to an invention or discovery."
>
> "In Atlantic Works *v.* Brady, 107 U. S., 192, 200, it was said that it is not the object of the patent laws to grant a monopoly for every trifling device which would naturally and spontaneously occur to any skilled mechanic or operator, in the ordinary progress of manufactures; and this doctrine was applied in Slawson *v.* Grand Street Railroad Co., 107 U. S., 649; in King *v.* Gallum, 109 U. S., 99; in Double-Pointed Tack Co. *v.* Two Rivers Manufacturing Co., 109 U. S., 117; in Estey *v.* Burdett, 109 U. S., 633; in Bussey *v.* Excelsior Manufacturing Co., 110 U. S., 131; in Pennsylvania Railroad Company *v.* Locomotive Truck Co., 110 U. S., 490; in Phillips *v.* Detroit, 111 U. S., 604; in Morris *v.* McMillin, 112 U. S., 244; and in Hollister *v.* Benedict Manufacturing Co., 113 U. S., 59.
>
> "In the case last cited the thing claimed was new, in the sense that it had not been anticipated by any previous inven-

tion, and it was shown to have superior utility, yet it was held not to be such an improvement as was entitled to be regarded, in the patent law, as an invention."

VII.

The Evidence as to the Difficulty of Inventing the Gate-Operating Mechanism of the Appellee.

There is evidence, which, according to the contention of appellant, shows that it was not without difficulty that appellee's gate-operating mechanism was devised. What has this to do with the case? This evidence was given by the witness Webster, called by the appellee (p. 109, x q. 34-38). It merely shows that several mechanisms for operating the gate were tried before the adoption of the one which is charged herein as being an infringement of the appellant's patent, and that the appellee was not satisfied until its very superior mechanism which figures in this case was contrived. If this proof shows any difficulty in constructing gate operating mechanism, it shows this with respect to appellee's mechanism and not appellant's.

VIII.

The Peeples' Application.

Appellant offered in evidence a certified copy of a patent application filed by appellee's master mechanic, Mr. Peeples. This was objected to as immaterial and irrelevant and as evidence which could not bind or effect the appellee (p. 53), because the evidence of a stranger to the suit and evidence given in another proceeding.

To meet the Peeples application, if it shall be considered, we will submit a few remarks concerning it.

Appellant's counsel regards it as containing admissions by Peeples that the improvement is patentable, and calls attention to the fact that the claims correspond with certain claims of the patent in suit. It must be borne in mind that the claims were based on a practical mechanism and upon a mechanism not shown in appellant's patent. Mr. Peeples' action in filing the application cannot be regarded as conclusive evidence that he regarded claims such as are made in appellant's patent, as tenable. If he did, that would not be decisive of the matter. But there is nothing to show but what he merely filed the application because he thought that inasmuch as the Patent Office had decided that such claims were tenable, they ought to be granted to him because he was the first inventor of their subject matter. Many an application is filed for such a reason.

IX.

Appellees Gate-Operating Mechanism was Invented Before Rosenfield's Mechanism was Contrived.

As we have said before, the gate operating mechanism used by the defendant is very different from that shown in appellants's (Rosenfield) patent. The differentiating features will be discussed hereafter.

Even if appellants' and appellees' gate-operating mechanism should be regarded as the same, the appellee must prevail in the suit, because its gate-operating mechanism was, in the eye of the patent law, invented before the appellant's (Rosenfield) gate-operating mechanism came into existence.

The appellee's gate-operating mechanism was, as early as November, 1882, applied to the kind of cars which had the gates hinged to the guard-rails (Rosenfield, p. 19, 62 Q. and p. 25 123 x Q). This was before appellant's patent was applied for.

All these facts about the appellee's cars were testified to by witnesses called by the appellee, and in part under objection from appellant's counsel (Brevoort, p. 79, 6 Q. and 7 Q.; p. 82, 8 Q.; Webster, pp. 105, 106 and 107; Shannon, p. 66).

Although this testimony was in part objected to, the objection was waived by eliciting the same facts from Rosenfield, Krone and Fagan, called by the complainant.

A drawing of the parts necessary for this gate-operating mechanism was made for the appellee in April, 1882 (p. 117, 4 Q).

Patterns were made by the beginning of June for all the parts (p. 106, 10 Q).

All that Rosenfield claims to have done before the defendant's gate-operating mechanism was put into use was to conceive his alleged improvement as applicable generally to all kinds of cars, to make some crude sketches and a small tin model and to show this model to Col. Hain, the manager of the appellee's railroad. Rosenfield claims to have been discouraged at this interview from doing anything further (p. 19, 56 Q). He does not show that he made any other effort to introduce it, although he considered it applicable to all kinds of railroad cars, (p. 22 and 23), and notwithstanding the fact that he considered it as advantageous on horse cars as on the cars of the elevated railroad (p. 23, 101 x Q). Col. Hain told him the alleged improvement was no account and couldn't be used (Rec., p. 35, fol. 60). It never has been used, and obviously could not be practically used, for the attendant would not be able to use it and maintain the position which had been found desirable for him to occupy in the passageway of the guard rail, for if he pulled the operating rod far enough for him to open the gate he would have either to get out of his position or else to run the rod through his abdomen. No wonder, in view of this, that Col. Hain told him his alleged improvement was no account, and could not be used.

What did Rosenfield then do? Nothing, until he saw the appellee's gate-operating mechanism in use. (p. 19, 62 Q).

The appellee's gate-operating mechanism was, therefore, invented while Rosenfield was sleeping on any rights which he may have had.

It will doubtless be claimed that the appellee's gate-operating mechanism was devised by reason of the interview which Rosenfield had with Col. Hain. The testimony of Col. Hain, however, renders such contention fruitless. He says the interview had nothing whatever to do with the invention or origin of the appellee's gate-operating mechanism (p. 123 & 124).

The different character of mechanism employed by the appellee indicates the truth of Col. Hain's testimony, if corroboration is required.

X.

The Prior State of the Art of which the Court will take Judicial Notice.

The idea underlying appellant's alleged improvement is the reaching of a distant object by an intermediate mechanism. The idea was a very old one.

The remarks of his Honor, Judge Wallace, form a fitting introduction to this topic. His Honor held (p. 183):

> "A brief reference to the prior state of the art will indicate that the combinations referred to in the several claims (of appellant's patent) are merely an application to a new situation of old devices which had been previously applied to analogous uses.
>
> "Devices to open and close an aperture at a distance from the operator in a great variety of forms was old. As illustrations of those things which are matters of common knowledge and of which the Court will take judicial notice, it is sufficient to allude to the strap used by a driver at the front of an omnibus to open and close the rear door; to the devices for opening or closing valves at a distance in steam and hydraulic apparatus, and to devices used at railway switches for opening and closing the rails."

The steam engine operating an elevator has a valve controlable through the agency of a rope or cable from a distant place. This is doubtless what His Honor, Judge Wallace, had in mind when he referred to the opening and closing of valves in steam and hydraulic apparatus.

Doubtless this Court will follow Judge Wallace as to taking judicial notice of these things. Many other things may be suggested as among those of which the Court may take judicial notice.

A person desiring to open or close a high window sash in his house uses a stick provided with a hook.

Window shutters are opened and closed without opening the window sashes, by employing certain mechanism intermediate of the shutters and of handles arranged within an apartment.

Shades for windows wound upon rollers have combined with them endless cords extending down the jambs of window casings to points convenient of reach for the purpose of enabling the shade rollers to be operated from distant points without reaching up to them.

A transom ventilator may be adjusted by a sliding rod extending down to a point convenient of reach. A transom ventilator has been operated in this manner for many years. The sliding rod employed is precisely such a sliding rod as is referred to in the 3rd, 4th and 5th claims of appellant's patent, and is connected to the swinging transom ventilator by a link, just as the sliding rod of appellant's 3rd, 4th and 5th claims is connected to the swinging gate by a link. This Court has recently decided a litigation covering this combination of sliding rod and link with a swinging transom ventilator. Wollensak *vs.* Reiher 115 U. S. 87.

The sliding rod employed with the link to operate a swinging transom ventilator has always had a locking device combined with it. This locking device has generally consisted of a screw, but it is nevertheless such a locking device as is called for by the fourth claim of appellant's patent, because this claim is not limited to any particular kind of locking device.

A dumb-waiter such as is ordinarily used in a house can be raised and lowered by a rope grasped at a distant point.

A bell located in a servant's quarters can be rung by a mechanism extending to the master's room.

Fence gates have been opened and closed from distant points by the passage of carriages over distant contrivances. The engineer of a locomotive, by pulling a rope, rings a bell or blows a whistle located at some distance from him.

Brakes are applied to the wheels of cars and other vehicles from one end of the vehicles, by the employment of intervening mechanism.

Car couplers are operated by levers extending to the top of the guard-rails of the cars.

Ventilators in cars have been shifted by handles extending into positions convenient for reach.

The conductor of a street car while standing in any place may ring a bell located over the front platform near the driver.

Fare registers located at one end of a car are capable of operation from any part of a car, through intermediate mechanism.

The so-called bobtail street cars have for many years been provided at the rear with a sliding door operated by the driver from the front platform through intermediate mechanism.

Evidently it was a common expedient to operate a distant article through intermediate mechanism. The idea is used in connection with a great variety of articles, and clearly was very old. How can a patent be sustained for the application of this idea or expedient, to a gate arranged at the side of a car platform?

The position for the operating handle or device is obvious, and suggests itself in every mechanism which is employed to reach a distant object, because it is always the place from which it is desirsble to operate the object.

That the Court will take judicial notice of matters of notoriety is well settled by the decisions of this Court.

In Brown *v.* Piper, 91 U. S., p. 43, this Court took judicial notice of an ice cream freezer, and held that *notice* in the pleadings and proof was unnecessary.

The above doctrine was affirmed in Dunbar *v.* Myers, 94 U. S., 198.

In Terhune *v.* Phillips, 99 U. S., 593, the Court even extended the doctrine, saying:

> "We cannot fail to take judicial notice that the thing patented was known before the issuing of the patent."

In Slawson *v.* Grand Street R. R. Co., 107 U. S., 654, the Court said:

> "Whether the invention, which is the subject matter in controversy, is patentable or not, is always open to the consideration of the Court, *whether the point is raised in the answer or not.*" "It will ill become a Court of Equity to render a money decree in his favor for the infringement of letters patent which are void on their face for want of invention."

In King *v.* Gallun, 109 U. S., 101, the Court said:

> "In deciding whether the patent covers an article, the making of which requires invention, we are not required to shut our eyes to matters of common knowledge or things in common use."

In Phillips *v.* Detroit, 111 U. S., 606, the Court again reiterated this doctrine, saying:

> "In passing upon the novelty of the alleged improvement covered by this patent we are permitted to consider matters of common knowledge or things in common use. *Brown* v. *Piper*, 91 U. S., 37; *Terhune* v. *Phillips*, 99 U. S., 592; *King* v. *Gallun*, 109 U. S., 99; *Ah Kow* v. *Nunan*, 5 Saw., 552."

Even if relevant for no other purpose the prior state of the art can be considered, regardless of pleadings, for the purpose of limiting and defining the claims. Grier *v.* Wilt, 120 U. S., 429.

XI.

The Prior State of the Art as shown by the Record..

Said his Honor Judge Wallace (p. 183):

> "Referring to the prior state of the art, as shown by various prior patents which have been introduced in evidence, it appears also that mechanism to open and close the entrance to passenger cars at a point distant fom the operator was likewise old, as where the operator standing upon the front platform employed such mechanism to open or close a door at the rear platform. One prior patent alone, the one granted to John Stephenson September 15th, 1874, shows five methods of closing and opening the rear doors of street cars from the front platform.
>
> "Mechanism for closing and opening apertures at a distance from the operator, in which the same devices were employed as are employed by the patentee, was old and is disclosed in a number of earlier patents, which have been put in evidence. It will suffice to refer to two only. The patent to Wollensack of March 11, 1873, for an improvement in Transom Lifters, describes the means for opening and closing the transom as consisting of a sliding rod, which is connected by a pivoted link to the arm of the transom frame. The patent to Corrigan, granted April 16, 1878, for an improvement in Blind Adjusters, whereby outside blinds are opened and closed without lifting the window sash, describes as the mechanism employed a sliding bar connected by a pivot link with a hinged shutter. In both these patents the aperture to be opened and closedat a distance from the operator—in one case a shutter and in the other a transom—is opened and closed, as is the case in the patent in suit, by pushing or pulling the sliding rod or bar. In both of these patents there is likewise described a locking device by means of which the sliding rod or bar is retained in a fixed position so that the shutter or transom will remain fastened when opened or closed, at the option of the operator, thus showing opening, closing, and locking apparatus in all essentials like that of the patent in suit. Moreover, the patent to Corrigan shows this apparatus arranged to open and close the two shutters of the windows, at the option of the operator simultaneously, the

> **sliding bars being so arranged as to be pushed or pulled each by one hand of the operator.**
>
> **"Mechanism for opening and closing apertures distant from the operator, in which the devices used for the purpose are the mechanical equivalents of those employed by the patentee, is shown to be old by by a large number of patents which have been put in evidence."**

His Honor Judge Wallace, in making these remarks referred not only to patents pleaded in the answer, but also to patents offered in evidence without having been pleaded. It is well settled that the Courts can always consider, regardless of the pleadings, any patents introduced merely for the purpose of illustrating the prior state of the art. Brown *v.* Piper, 91 U. S., 43.

His Honor, Judge Wallace, denied appellee the right to amend the answer for the purpose of pleading certain patents. He did not, however, deny appellee's right to introduce these patents as a part of the state of the art (p. 179). Clearly he could not have done so under the law. *Non constat* he denied the motion for the very reason that it was unnecessary to plead the patents to entitle appellee to refer to them. The affidavit of Edwin H. Brown, upon which the motion was made, and the notice of the intention to make the motion (pp. 174 & 175), advanced the theory that the patents were admissible as part of the state of the art, and showed that testimony had already been taken with reference to them. The motion related to these proofs. His Honor, Judge Wallace, did not strike out the proofs, but simply denied appellee the privilege of amending the answer.

In considering the testimony relating to the patents introduced in evidence, we will divide the patents into two classes, those pleaded and those not pleaded.

Patents Pleaded.

Defendant's Exhibit Smith Patent of 1872 (p. 123). Mr. Brevoort, appellee's expert, says (p. 84), that this patent

> "shows a method of connecting the driver's seat of a carriage with the door or doors thereof, so that the driver from the preferred location, to wit: the box seat of the carriage, can have control of the doors of the vehicle without moving from his position."

Defendant's Exhibit Cooper Patent of 1873 (p. 139). This Mr. Brevoort says (p. 84):

> "Shows how the doors of railway carriages can be controlled from one part of a train."

We will now quote Mr. Brevoort's testimony as to some patents relating to doors controlling communication between the insides of cars and the platform or steps. Such doors clearly have the same requirements as the gates in appellant's patent, and differ merely with respect to their location and the location of the handles through which they are operated. Mr. Brevoort says (p. 83):

> "In the case of the doors the preferred position of the operator is upon the front platform of the car, and it is the object of the door-opening and closing devices described in the patents, to which I am about to refer to give to the person on the front platform control *over that which closes or opens the way for passengers*, this being the preferred location for the operator, though the same mechanism, if altered slightly, would have suited other positions equally as well. I will first refer to the Stephenson Patent, No. 162,964 of 1875 (Deft's. Exhibit Stephenson Patent, No. 3). This patent shows a shaft and handle with gearing, so that by rotating the handle upon the front rail of the car, the rear door was opened or shut, as the case might be. The Stephenson Patent, No. 155,118 (Deft's Exhibit Stephenson Patent No. 2 of 1874) shows five methods of opening doors from the front platform, the doors being located at the rear of the car. In

> the method shown in Figs. 1 and 2, a crank handle placed on the dash-board rail is made to connect by means of a crank, a connecting rod, a bell-crank lever, and a link with the sliding door. In the second case, Figs. 3 and 4, a handle arranged in like manner, with slightly different connecting mechanism, operates a door moving in a semi-circle.
>
> "In Fig. 5 a like arrangement of handle with two cranks, two cords, and a pulley, operates a sliding semi-circular door.
>
> "Fig. 6 shows a like door, utilizing two cords, but with a different arrangement of levers.
>
> "Fig. 9 shows another method where direct metallic connections are used, the door in this case sliding on a curve, but not a semi-circle. The Stephenson Patent, No. 147,190, of 1874 (Defendant's Exhibit Stephenson Patent, No. 1), shows how a cord may be arranged by which the door may be operated, which cord connects with the door.
>
> "The English patent to Clark, of the year 1877, No. 1,072, is for some of the inventions of Stephenson, and shows some of the methods to which I have referred, and also the additional method where a lever, convenient to the driver's hand, operates a rock shaft having a lever upon it at the rear end, which lever connects with a slot in the door. The same patent also shows a method of opening the rear door by means of a tooth segment connecting with a rack upon the door."

In this class we will place Defendant's Exhibit Moore & Thompson Patent, for while it was not pleaded, it is really a part of the file of the application upon which appellant's patent issued (see last paragraph of p. 66), because this application was rejected upon reference to the Moore & Thompson Patent. Appellant's application was introduced by him in evidence. Owing to these facts we submit that the Moore & Thompson Patent is entitled to the same force as though pleaded. It shows (p. 150) a gate applied to the side entrance of an ordinary car platform, and operated by a handle arranged conveniently for a conductor occupying the usual position. This patent, Mr. Brevoort says (p. 82):

> "described a gate for a railway passenger car intended to be used on roads operated by steam, which gate consists of slats

> pivoted one to the other, and capable of folding when the passage-way to the platform is to be opened, and unfolding when it is to be closed. This gate, unlike those previously described, is operated by a system of levers, so that the guard can stand upon the platform near the car door and, by operating the lever adjacent to his hand, open or close the gate, thus permitting access to the platform to be had, or cutting off and closing the passage-way when desired. The preferred location for the operator in this case was at the car door; but, by a slight modification in the mechanism, this position could have been transferred so that the guard would have stood between the passage-way of the two cars."

Patents not Pleaded.

Before taking up these patents we would call attention to the fact that although objection was made to the introduction of some of the patents the objections were not followed by motions to strike out and hence were waived.

The Moore & Thompson Patent clearly can be referred to as a part of the state of the art, even if it is not entitled to the same force as though pleaded.

First, we will consider the patents covering shutter workers.

The earliest of the shutter worker patents is Deft's Exhibit Douglas Patent of 1861. Says Mr. Brevort, defendant's expert, of this patent (p. 84):

> "This is also for a shutter worker, in this case sliding shutters being used, each provided with a rack, a knob on the inside of the window, operating pinions which cause the shutters to slide to and fro, when either one or both of the knobs are rotated by a person occupying the desired position, which in this case, and in the case of all shutter workers, is inside of the window."

The next shutter worker to be considered is that shown in Defendant's Exhibit Brown Patent of 1864. This shutter is very similar to the one forming the subject of the Douglas patent.

Next we come to a consideration of Defendant's Exhibit Kidder Patent of 1869. Says Mr. Brevoort (p. 84):

> "This shows two sliding shutters operated on the inside of the house by a shaft and a crank and link upon the outside, connecting with the shutters. In this device the shutters are locked in their opened and closed positions."

The shutter worker of Defendant's Exhibit Gibbs Patent of 1873 next merits attention. Of this Mr. Brevoort says (p. 85):

> "The patent of Gibbs shows a shutter worker using two bell-crank levers connecting with the shutters by pivoted links, locking mechanism being employed for fastening the shutters in any position.
>
> "It will be observed that in all these shutter worker patents, both shutters may be operated at once, if desired."

Defendant's Exhibit Corrigan Patent of 1878 is next in order in the list of the shutter worker patents. Of this Mr. Brevoort says (p. 84):

> "It will be seen that hinge shutters are opened and closed by means of a sliding bar and a link connecting the bar with the shutter, both shutters being capable of simultaneous operation, if so desired; also, *a locking mechanism* is provided so that the shutter can be locked in an open or closed position. I fail to see that any patentable distinction exists between a shutter worker and a door or gate worker."

This Corrigan patent was not pleaded. It is, however, admissible as part of the state of the art.

Next we come to Kelso & Ludwig's patent of 1879. This, as Mr. Brevoort says (p. 84):

> "Shows a modification of the previous patent."

We now come to a different subject matter in Defendant's Exhibit Wollensak Patent of 1873. Says Mr. Brevoort (p. 85), this

> "shows a method of opening ventilators for doors by means of a sliding rod capable of being locked in any desired position in connection with a pivoted link."

It will be observed that this contrivance is very like Rosenfield's. Consider the ventilator door as corresponding to the gate of Rosenfield, then we find in both apparatus a sliding rod provided with a handle and a locking arrangement and a link or second rod pivotally connected to the door or gate, and to the sliding rod.

A kindred article is found in Defendant's Exhibit Ferguson Patent of 1879. Says Mr. Brevoort (p. 85) in this patent will be found mechanism

> " for opening a fence gate from the desired location, which, in this case, is where the wheels of the wagon pass in approaching the gate from either direction."

Defendant's Exhibit Castor Patent of 1861,as Mr. Brevoort says (p. 83):

> " Shows a method of opening the rear door by means of a lever located on the front platform, and suitable connecting devices under the car, between it and the rear sliding door."

Defendant's Exhibit Brill Patent of 1874, Mr. Brevoort says (p. 84):

> " Shows a method whereby the driver, either by his hand or his foot, can operate the rear door by rotating a shaft under the car and thus, by suitable gearing and levers, open or close the rear door."

Defendant's Exhibit Little Patent of 1873, says Mr. Brevoort (p. 84):

> " Shows a method of opening a street car door by means of a cord operated by a pulley around which the cord is wrapped, and which pulley is operated by the driver being provided with a crank for that purpose."

Defendant's Exhibit Hart Patent of 1875, says Mr. Brevoort (p. 84):

> " Shows a car in which a rock-shaft, running from the front platform and there provided with a lever, operates at the rear of the car a door, which slides to and fro, the lever

> at the rear end of the rock-shaft connecting with the door by a link."

We will now turn to a consideration of the use of gates at the sides of car platforms.

First in order is Defendant's Exhibit Madison & McLaughlin Patent of 1869. Mr. Brevoort (p. 82) says:

> "This gate, when opened, lay against the transverse portion of the car body, and when closed was practically at right angles therewith, closing the passage way to the platform."

Defdt's Exhibit Stephenson's Patent No. 4, of 1880, Mr. Breevort says (p. 82), shows a like arrangement

> "for closing the platform entrance of a car, the gate being so arranged that when the entrance to the platform is open the gate swings in front of the rail of the car or platform. Neither of the patents I have just referred to, or the previous one, described any gate-opening mechanism."

The state of the art as proved outside of the Patents.

Cars have been provided with coupling mechanism provided with operating handles arranged on the guard rails (p. 102, 72 Re-D. Q.).

Locomotives have had their cabs provided with doors which could be opened and closed and locked in any position by means of a mechanism extending into proximity with the engineer's seat. Defendant's Exhibit Locomotive Cab Model No. 2 illustrates this.

No mention was made in pleadings of the names of those who have been called as witnesses concerning these doors. It can, however, be considered as a part of the prior state of the art, for it does not meet the claims of appellant's patent with respect to the guard rail. The testimony about it is very clear (Webster, p. 108, 23 Q.; Lonergan, p. 111, and Brevoort, p. 103). The structure was combined with a main door, a smaller door hinged to an opening in the main door. The smaller door was provided with a fastening whereby it could be secured to the main door so as to become in effect part of it. The main door could be secured, closed, and the smaller door unfastened so as to be capable of swinging independently of the main door. The operating mechanism was secured to the smaller door, hence it could be used to open and close the smaller door when the latter was unfastened and the main door secured, or to adjust the main door when this door was unfastened, and the smaller door fastened to the latter so that the two in effect formed one door. Mr. Renwick, complainant's expert, says he does not understand this to be so (p. 50), but appellant's counsel clearly understood it, as is shown by his cross-examination (p. 114, 45 Re-x Q).

Counsel tries (p. 105) to differentiate this locomotive cab door from the gate-operating mechanism shown in complainant's patent by the fact that it can be locked in an open position, a closed position, or any intermediate position. How the fact that its capabilities are greater than the complainants' (Rosenfield) mechanism can help the complainant is not obvious, to say the least.

Summary of the State of the Art.

Appellee's expert, Mr. Brevoort, fails to see any invention in the things claimed by Rosenfield, for the following reasons :

(Rec., p. 85):

> "*First.*—It was old to have gates on the steps or entrances of car platforms, and it was old to operate these gates by a person standing between the cars, and without special mechanism; that it was also old to operate gates so located, by opening and closing mechanism placed where it was desired the operator should stand.
>
> "*Second.*—It was old to open car doors from the place where the operator was desired to stand, to wit: the front platform, by many different arrangements of mechanism, all of which serve to bring the door under the control of the operator placed at a distance therefrom.
>
> "*Third.*—That it was old to operate shutters by various kinds of mechanism which admitted of a simultaneous operation, and
>
> "*Fourth.*—It was old to open fence gates and transom light or door ventilators, from a distant position, by means of connecting mechanisms, which connected the operator, who stood in a certain desired location, with the device to be opened or closed."

(Rec., p. 104):

> "*Fifth.*—It was old to open and close the door of a locomotive engine cab by the mechanism of the complainant's patent and to hold it closed when it was desired; the operator sitting at a distance from the door."

Effort has been made by complainants' counsel, in the cross-examination of Mr. Brevoort, to show that he has not always entertained the same views concerning what is essential to invention, as those expressed by him in this case. Reference is, to this end, made to certain testimony given in the case of Stephenson *v.* The Brooklyn R. R. Co. (p. 98, *et seq.*). Mr. Brevoort differentiates the present case from that. Even if he failed to succeed in the differentiation, it would be immaterial, for this Court held in that case, contrary to Mr. Brevoort's views, that no invention was involved in the subject matter of the O'Haire patent sued on, and Mr. Brevoort's testimony, in the present case, must be assumed to have been given in the light shed upon the subject of patentability by this Court in that case.

Appellant's Theory for Supporting the Patent in View of the Prior Structures.

The only thing which appellant's expert, Mr. Renwick, is able to say in support of the theory that appellant's alleged improvement was a patententable improvement, is (p. 49) that although many mechanisms are found in the prior state of the art which could be used to operate the gates, as set forth in appellant's patent, there is nothing giving

> "the slightest suggestion of the idea of a handle located on or near the guard-rail, so that a guard might stand out of the way of entering and leaving passengers, and operate the gate on that side of the car which is the nearest the station platform; nor do any of them give the slightest hint of locking two such handles and their gate-operating apparatus on the adjacent guard-rails of two adjacent cars, whereby the guard cannot only keep out of the way of incoming and outgoing passengers from two cars, but also open or shut either gate without leaving or substantially altering his position in the passage-way or near thereto.
>
> "These ideas, as before said, were the basis of the invention, and after the idea has once entered into the head of an inventor, it was easy for a competent mechanic, especially with the aid of the state of the art, to devise means for connecting the gates with the handles so that when motion was applied to the handles it would be properly communicated in such manner as to open or close the gates. In this connection, however, it must be observed that there is not a single one of the contrivances described in any of the patents or represented in the drawings or models, with the exception of the contrivances shown in Locomotive Cab Model No. 2, which could, unless more or less altered, be used to make the proper connection between Rosenfield's handle and Rosenfield's gate, so as to operate it in the proper manner."

It would seem as though Mr. Renwick in making the latter statement, must have overlooked the great variety of apparatus which could be used according to the many suggestions of appellant's patent, and in making the comparison with Locomotive Cab Model No. 2, he evidently exclusively considered the mechanism figured in the drawings of appellant's patent. Even if Mr. Renwick were correct in his statement that no apparatus, without alteration, could be used for the purpose of appellant's patent, he would have to show still more. In order to prevail, it would be incumbent upon him to show that the requisite alterations involved the exercise of invention.

The Decision as to the Patentability of the Alleged Improvement.

His Honor, Judge Wallace, summed up the prior state of the art, saying (p. 184):

> "Mechanism for opening and closing apertures distant from the operator, in which the devices used for the purpose are the mechanical equivalents of those employed by the patentee, is shown to be old by a large number of patents which have been put in evidence.
>
> "This partial exhibit of the prior state of the art demonstrates that what the patentee did was to adapt well-known devices to the special purpose to which he contemplated their application. It was necessary that the gates should swing inward to open and outward to close; that the sliding rod should be located where it would be out of the way of passengers entering or leaving the platform, and that the end or handle of the rod should be located where it could be conveniently operated by the attendant without inconveniencing outgoing or incoming passengers. The new situation required adequate modifications of existing devices for opening and closing an aperture at a distance from the operator appropriate to the new occasion. Accordingly the patentee located the rods on bearings secured to the guard

rails with their handles near the passage-way formed by the space or opening near the middle of the guard rail. If this required invention his improvement was the proper subject of a patent. He did nothing more and nothing less than this. It seems impossible to doubt that any competent mechanic familiar with devices well known in the state of the art could have done this readily and successfully upon the mere suggestion of the purpose which it was desirable to effect. When it was done as to one car platform it was only requisite to duplicate it upon another to make the improvement of the patentee in all its length and breadth."

All Appellant's Claims are Met.

Clearly claims 1 and 2, being for mere abstractions, are fully met in the prior state of the art, saving as to the new situation or new place for the operating handle, and claims 3, 4, and 5, are absolutely met because these claims are not limited to any location of the operating handle.

XII.

The Quantum of Invention.

Mr. Brevoort (pp. 86, 87, 88 and 89) testifies and illustrates by a model, that it would require less invention to adapt some of the structures found in the prior state of the art to the apparatus of appellant's patent than would be necessary for the working out of all the modifications suggested in appellant's patent, notably, the modification as to sliding gates worked from beneath the platform and the modification as to gates hinged to the car body and worked from beneath the platform. This would seem to conclusively preclude appellant from prevailing upon the theory that invention was requisite to adapt the old structures to the new situation.

Upon this point his Honor, Judge Wallace held p. 184:

> "It rarely happens that old instrumentalities are so perfectly adapted for a use for which they were not originally intended as not to require any alteration or modification. If these changes involve only the exercise of ordinary mechanical skill they do not sanction the patent, and in most of the adjudged cases where it has been held that the application of old devices to a new use was not patentable, there were changes of form, proportion, or organization of this character which were necessary to accommodate them to the new occasion."

In Pennsylvania R. R. Co. *v.* Locomotive Truck Co., 110 U. S., 498, this Court held:

> "That the mere application of an old contrivance in an old way to an analogous subject, without any novelty in the mode of applying such old contrivance to the new purpose is not a valid subject matter of a patent."

In Blake *v.* San Francisco, 113 U. S., 682, this Court held:

> "Where the public has acquired in any way the right to use a machine or device for a particular purpose, it has the right to use it for all the like purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

But there is a later decision by this Court, still more in point. Indeed it fits the case at bar exactly. We refer to Stephenson *v.* Brooklyn R. R. Co., 114. U. S., 152. In the decision of this case the Court said:

> "At the date of O'Haires' application it was well known, as is shown by the evidence, that doors and window shutters guided by slides, both in vehicles and apartments. were opened and closed by mechanism used by persons placed in such situations that they could neither reach nor open

> and close the doors or shutters directly. The device of O'Haire must, therefore, to be the subjeot of a valid patent, embody some new means for accomplishing this end."

The door and window shutter mechanisms referred to in this decision, of course, required some alterations to adapt them to the new situation and the Court ignored these necessary changes or elements evidently, because no invention was required for their production. The Court held that new means were requisite for sustaining a patent. This is precisely what his Honor Judge Wallace held in the case at bar, saying (p. 184):

> " The patentee is entitled to the merit of being the first to conceive of the convenience and utility of the gate opening and closing mechanism, which could be operated efficiently by an attendant in the new situation. His right to a patent, however, must rest upon the novelty of the means he contrives to carry his idea into practical operation."

And because Judge Wallace could find no new means, he dismissmed the bill of complaint herein.

XIII.

Appellant's Alleged Improvement was but an obvious expedient.

Rosenfield found the cars just as they are figured in the patent. The guards or attendants had long been accustomed to stand in the passageway in the guard railing. While standing there they experienced difficulty, greater or less, according to their height, in operating the gates. Rosenfield conceived of applying the old idea of arranging an intermediate mechanism between the place occupied by the guards or attendants and the gates. The art was teeming with mechanisms suitable for the purpose. The operating handles had to be located where they could be easily reached. There was but one possible situation for them, that was on or near the guard-railing. What meritorious thing was there for Rosenfield to do? Absolutely nothing. What he did clearly involved no exercise of the inventive faculty.

XIV.

Appellants Claims Do Not Cover Combinations.

How can it be said that parts of the car and the gate operating mechanism are in "*combination?*" The car was old in every respect and the gates were operated from the same position. Equally old was the gate operating mechanism. The two were assembled, but not in such a way as to make what the law knows as a "combination." They cannot, therefore, be upheld.

In Thatcher Heating Co. *v.* Burtis, 121 U. S., 295, this Court held that if the assembling of things old in themselves involved difficulties which were overcome by "something more than mere mechanical ingenuity," then and only then would there be a patentable improvement, and that even in such case the patent could not be

> "for the combination, however made, of the fuel magazine and the fireplace heater, but for the means which he had invented for effecting it."

Pickering *v.* McCullough, 104 W. I., 317.

Appellant's counsel cites Seymour *v.* Osborn, 11 Wall., 516. This case, however, is no authority for sustaining the patentability of the appellant's alleged improvements, for it was distinctly shown in that case that the bringing together of old devices involved a new operation and a novel and beneficial result. It cannot be said that in the case at bar the gate operating mechanism operates in any novel way or leads to any new result. It would operate precisely in the same manner if taken from a car and used elsewhere. Neither is the function or operation of the car different with the gate operating mechanism applied than otherwise it would be. Each of the two old things combined operates in the same manner that it did before, neither modifying nor affecting the other, and any utility that there may be from the assembling of the two old things, is a utility due solely to aggregation, wherefore this case is not parallel to Seymour *v.* Osborne.

XV.

Infringement.

Of course if the first and second claims of appellant's patent can be sustained broadly, they cover appellee's mechanism. We submit that the third, fourth and fifth claims broadly construed are restricted to a sliding rod not found in Appellee's mechanism. The mechanism defined by these claims is not shown to be practical. It is radically different from appellee's mechanism.

In brief we submit in conclusion that the first and second claims cannot be sustained because they are for mere abstractions, novel only as to situation, and not for patentable inventions, and that the third, fourth and fifth claims are for abstractions not even restricted to any particular location of an operating handle and definite solely with respect to a certain link and sliding rod, which were old and the latter being a feature not found in appellee's mechanism.

It is respectfully submitted that the decision should be affirmed.

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